ALPINE®

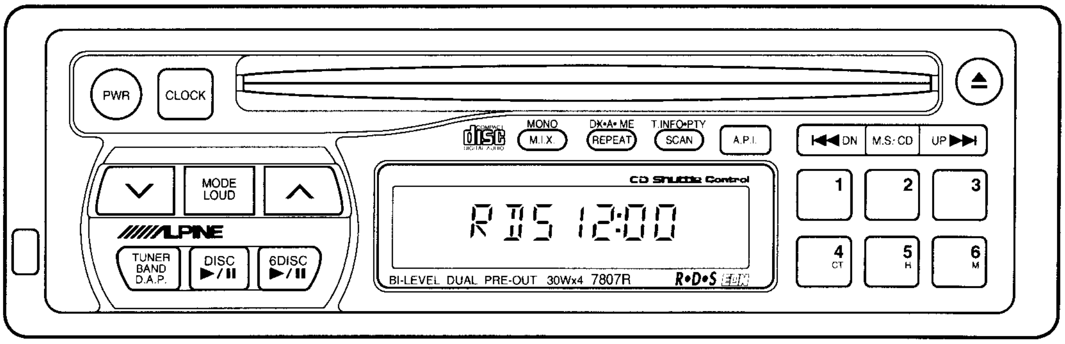
SERVICE MANUAL

FM/MW/LW/RDS Compact Disc Receiver

CD Shuttle Controller

COMPACT
disc
DIGITAL AUDIO

- For the CD player mechanism parts (DP24H01B) of this model, refer to the Service Manual • DP-H Series (68P51097W02).


PWR
CLOCK
MONO
M.I.X
DK•A•ME
REPEAT
T.INFO•PTY
SCAN
A.P.I.
DN
M.S.CD
UP
MODE
LOUD
ALPINE
CD Shuttle Control
RDS 12:00
TUNER
BAND
D.A.P.
DISC
►/II
6DISC
►/II
BI-LEVEL DUAL PRE-OUT 30Wx4 7807R
R•D•S
1
2
3
4
CT
5
H
6
M

7807R

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Spare Schematic Diagram Inserted.

Specifications

<CD SECTION>

System	Optical (Compact Disc system)
Quantizing Bit Number	16 bit Liner system
Channels	2 Channels
Channel Balance (1kHz)	0±3dB
Distortion (1kHz)	0.1%
Frequency Response (Ref. 1kHz)	17Hz : 0±3dB 127Hz : 0±2dB 10.007kHz : 0±2dB 19.997kHz : 0±4dB
S / N Ratio (1kHz)	80dB
Separation (1kHz)	55dB
Noise Level (at Volume Min)	0.1mV
Currents (at PLAY)	1.2A
De-Emphasis (Ref. 1kHz)	4kHz : -20±3dB 16kHz : -20±3dB

<FM RADIO>

Intermediate Frequency	10.7±0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono at 98.1MHz)	17.2dBf
Limiting Sensitivity (-3dB, at 98.1MHz)	19.2dBf
S / N Ratio (Stereo at 98.1MHz)	56dB
Image Rejection (at 106.1MHz)	40dB
IF Rejection (at 90.1MHz)	60dB
Distortion (Input 1mV at 98.1MHz)	1%
Frequency Response (Ref. 400Hz, at 98.1MHz)	100Hz : 0±3dB 10kHz : -12±3dB
Stereo Separation (98.1MHz)	20dB
SK Sensitivity (98.1MHz)	25.2dBf
PS Sensitivity (98.1MHz)	36.2dBf
TP Sensitivity (98.1MHz)	36.2dBf

<MW RADIO>

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Usable Sensitivity (20dB S / N, at 999kHz)	34dB
S / N Ratio (at 999kHz)	44dB
Image Rejection (at 1,404kHz)	50dB
IF Rejection (at 603kHz)	60dB
Distortion (at 999kHz)	1.5%
Frequency Response (Ref. 400Hz, at 999kHz)	100Hz : -3±4dB 4kHz : -12+6, -12dB

<LW RADIO>

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Usable Sensitivity (20dB S / N, at 216kHz)	41dB
S / N Ratio (at 216kHz)	42dB
Image Rejection (at 270kHz)	40dB
IF Rejection (at 162kHz)	50dB
Distortion (at 216kHz)	1.5%
Frequency Response (Ref. 400Hz, at 216kHz)	100Hz : -3±4dB 4kHz : -12+6, -12dB

<GENERAL>

Power Supply	DC14.4V
Power Output / Impedance	14W / 4ohm
Output Voltage / Impedance	500mV / 10kohm
Semiconductors	32 IC's, 70 Transistors, 33 Diodes, 8 Zener Diodes
Dimensions (W×H×D)	Chassis : 178×50×152 mm
	Nose : 172×49×22 mm
Weight	1.5kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

In Case of Difficulty

If you encounter a problem, please review the items in the following checklist. This guide will help you isolate the problem if the unit is at fault. Otherwise, make sure the rest of your system is property connected or consult your authorized Alpine dealer.

Initial Turn-on After Installation

No function or display	Car's ignition is off.	If connected following instructions, the unit will not operate with the car's ignition off.
	Power switch is off.	With the car's ignition on, push the PWR on/off switch to turn power on.
	Improper power lead connections.	Check power lead connections.
	Blown fuse.	Check the fuses on the battery leads; replace with the proper value if necessary.
Functions OK but no sound	Volume level too low.	Adjust the volume to the desired level.

Radio Mode

Unable to receive stations.	No antenna or open connection in cable.	Make sure the antenna is properly connected; replace the antenna or cable if necessary.
Unable to tune stations in the Seek mode.	Your are in a weak signal area.	Make sure the tuner is in the DX mode.
	If the area you are in is not known to be a weak signal area, the antenna may not be grounded and connected properly.	Check your antenna connections; make sure the antenna is properly grounded at its mounting location.
	The antenna may not be the proper length.	Make sure the antenna is fully extended; if broken, replace the antenna with a new one.
Broadcast is noisy.	The antenna is not the proper length.	Extend the antenna fully; replace it if it is broken.
	The antenna is poorly grounded.	Make sure the antenna is grounded properly at its mounting location.
	The station you are listening to is weak or susceptible to multipath interference.	Press the MONO button to activate the Mono mode until you change stations or the signal improves.

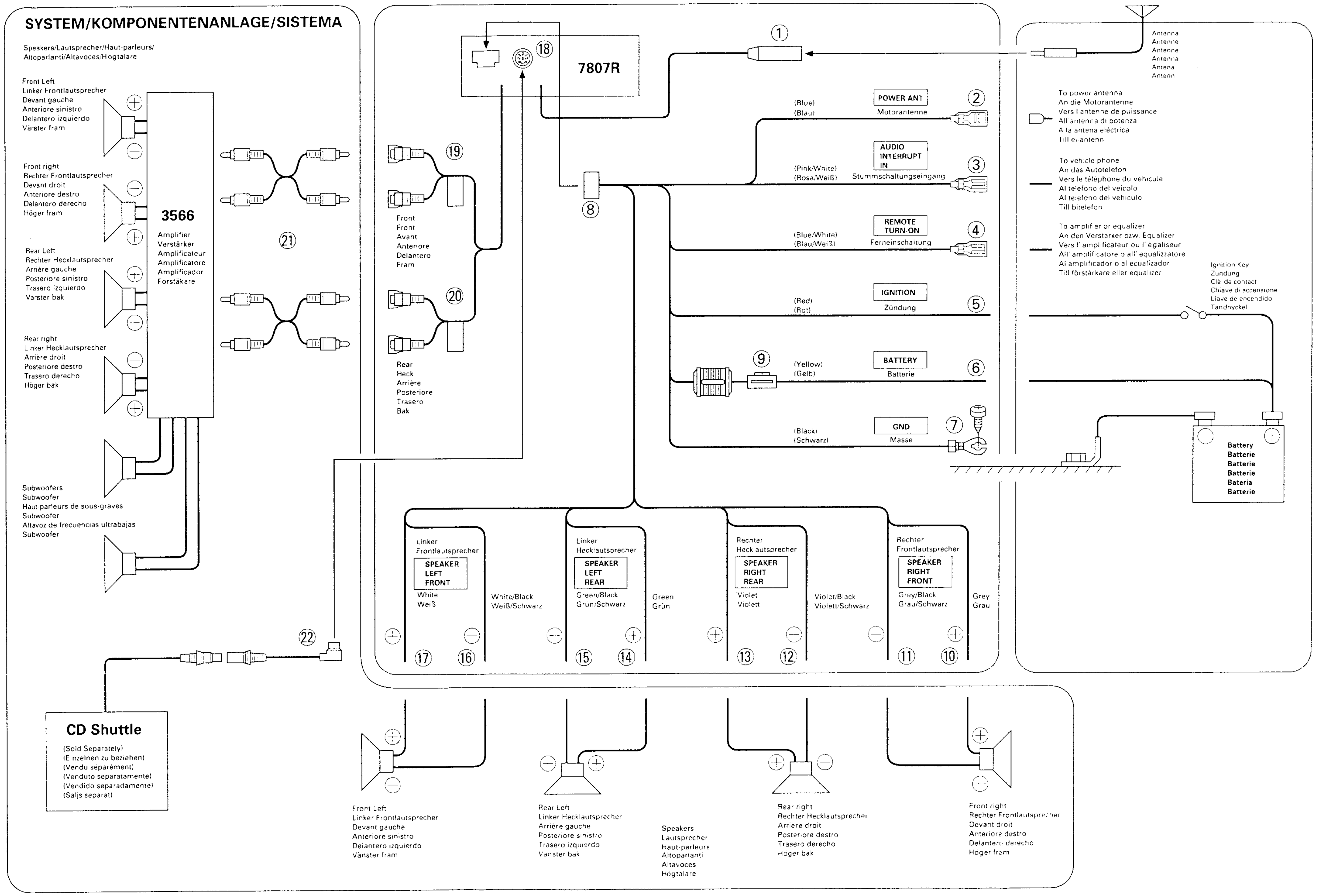
In Case of Difficulty

CD Mode

CD not functioning	Out of operating temperature range +50°C (+120°F) for CD.	Allow the car's interior (or trunk) temperature to cool.
CD playback sound is wavering	Moisture condensation in the CD Module.	Allow enough time for the condensation to evaporate (about 1 hour).
CD insertion not possible.	A CD is already in the CD player.	Eject the CD and remove it.
	The CD is being improperly inserted.	Make sure the CD is being inserted following instructions in the Owner's Manual.
Unable to fast forward or backward.	The CD has been damaged.	Eject the CD and discard it; using a damaged CD in your unit can cause damage to the mechanism.
Sound skips due to vibration.	Improper mounting. Disc is very dirty. Disc has scratches.	Securely re-mount the unit. Clean the disc. Change the disc.
Sound skips without vibration.	Dirty or scratched disc.	Clean the disc; damaged discs should be replaced.

- - - H	Protective circuit is activated due to high temperature.	Will disappear when the temperature returns to within operation range.
Shuttle ERROR-01	Malfunction in the CD Shuttle.	Consult your Apline dealer. Press the magazine eject button and pull out the magazine. Check for error indication. Insert the magazine again. If the magazine cannot be pulled out, consult your Alpine dealer.
	Magazine ejection not possible.	Press the magazine eject button. If the magazine does not eject, consult your Alpine dealer.
Shuttle EEEE	Incorrect connection or disconnection of CD Shuttle.	Check connection between CD Shuttle and control unit.
Shuttle NO MAGZN	No magazine is loaded into CD Shuttle.	Insert a magazine.
Shuttle NO DISC	No indicated disc.	Choose another disc.

Connections/Anschlüsse/Connexiones/Collegamenti/Conexiones/Anslutningar


SYSTEM/KOMPONENTENANLAGE/SISTEMA
Speakers/Lautsprecher/Haut-parleurs/Altoparlanti/Altavoces/Högtalare
Front Left
Linker Frontlautsprecher
Devant gauche
Anteriore sinistro
Delantero izquierdo
Vänster fram
Front right
Rechter Frontlautsprecher
Devant droit
Anteriore destro
Delantero derecho
Höger fram
Rear Left
Rechter Hecklautsprecher
Arrière gauche
Posteriore sinistro
Trasero izquierdo
Vänster bak
Rear right
Linker Hecklautsprecher
Arrière droit
Posteriore destro
Trasero derecho
Höger bak
3566
Amplifier
Verstärker
Amplificateur
Amplificatore
Amplificador
Forstäkare
Subwoofers
Subwoofer
Haut-parleurs de sous-graves
Subwoofer
Altavoz de frecuencias ultrabajas
Subwoofer
㉑
㉒
CD Shuttle
(Sold Separately)
(Einzelnen zu beziehen)
(Vendu séparément)
(Venduto separatamente)
(Vendido separadamente)
(Saljs separat)
7807R
⑱
⑲
Front
Front
Avant
Anteriore
Delantero
Fram
⑳
Rear
Heck
Arrière
Posteriore
Trasero
Bak
⑧
①
(Blue)
(Blau)
POWER ANT
Motorantenne
②
(Pink/White)
(Rosa/Weiß)
AUDIO INTERRUPT IN
Stummschaltungseingang
③
(Blue/White)
(Blau/Weiß)
REMOTE TURN-ON
Ferneinschaltung
④
(Red)
(Rot)
IGNITION
Zündung
⑤
⑨
(Yellow)
(Gelb)
BATTERY
Batterie
⑥
(Black)
(Schwarz)
GND
Masse
⑦
Linker Frontlautsprecher
SPEAKER LEFT FRONT
White
Weiß
White/Black
Weiß/Schwarz
⑰
⑯
Linker Hecklautsprecher
SPEAKER LEFT REAR
Green/Black
Grün/Schwarz
Green
Grün
⑮
⑭
Rechter Hecklautsprecher
SPEAKER RIGHT REAR
Violet
Violett
Violet/Black
Violett/Schwarz
⑬
⑫
Rechter Frontlautsprecher
SPEAKER RIGHT FRONT
Grey/Black
Grau/Schwarz
Grey
Grau
⑪
⑩
Antenna
Antenne
Antenne
Antenna
Antena
Antenn
To power antenna
An die Motorantenne
Vers l antenne de puissance
All'antenna di potenza
A la antena eléctrica
Till el-antenn
To vehicle phone
An das Autotelefon
Vers le téléphone du vehicule
Al telefono del veicolo
Al telefono del vehiculo
Till bitelefon
To amplifier or equalizer
An den Verstärker bzw. Equalizer
Vers l' amplificateur ou l' égaliseur
All' amplificatore o all' equalizzatore
Al amplificador o al ecualizador
Till förstärkare eller equalizer
Ignition Key
Zundung
Clé de contact
Chiave di accensione
Llave de encendido
Tandnyckel
Battery
Batterie
Batterie
Batterie
Bateria
Batterie
Front Left
Linker Frontlautsprecher
Devant gauche
Anteriore sinistro
Delantero izquierdo
Vänster fram
Rear Left
Linker Hecklautsprecher
Arrière gauche
Posteriore sinistro
Trasero izquierdo
Vanster bak
Speakers
Lautsprecher
Haut-parleurs
Altoparlanti
Altavoces
Högtalare
Rear right
Rechter Hecklautsprecher
Arrière droit
Posteriore destro
Trasero derecho
Höger bak
Front right
Rechter Frontlautsprecher
Devant droit
Anteriore destro
Delantero derecho
Höger fram

① **Antenna Receptacle**

② **Power Antenna Lead (Blue)**
When loaded with a power antenna, connect to the +B terminal of the power antenna.

③ **Audio Interrupt In Lead (Pink/White)**

④ **Remote Turn-On Lead (Blue/White)**
Connect this lead to the remote turn-on lead of your amplifier or signal processor.

⑤ **Switched Power Lead (Ignition) (Red)**
Connect this lead to an open terminal on the vehicle's fuse box or another unused power source which provides (+) 12V only when the ignition is turned on or in the accessory position.

⑥ **Battery Lead (Yellow)**
Connect this lead to the positive (+) post of the vehicle's battery.

⑦ **Ground Lead**
Connect this lead to a good chassis ground on the vehicle. Make sure the connection is made to bare metal and is securely fastened using the sheet metal screw provided.

⑧ **Power Supply Connector**

⑨ **Fuse Holder (10A)**

⑩ **Right Front (+) Speaker Output Lead (Grey)**

⑪ **Right Front (–) Speaker Output Lead (Grey/Black)**

⑫ **Right Rear (–) Speaker Output Lead (Violet/Black)**

⑬ **Right Rear (+) Speaker Output Lead (Violet)**

⑭ **Left Rear (+) Speaker Output Lead (Green)**

⑮ **Left Rear (–) Speaker Output Lead (Green/Black)**

⑯ **Left Front (–) Speaker Output Lead (White/Black)**

⑰ **Left Front (+) Speaker Output Lead (White)**

⑱ **DIN Connector**
Connect this to the DIN connector on the CD shuttle.

⑲ **Front Output RCA Connectors**
RED is right and WHITE is lef

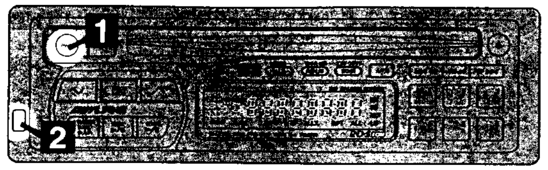
⑳ **Rear Output RCA Connectors**
RED is right and WHITE is left.

㉑ **RCA Extension Cable (Sold Separately)**

㉒ **DIN Extension Cable**
NOTE:
If the DIN Extension cable supplied with the CD Shuttle does not have an "L" shaped connector, connection may be hindered at certain installation locations. In this case, purchase a 491002 Adaptor (sold separately).

Detachable Front Panel

Detaching the Front Panel



1

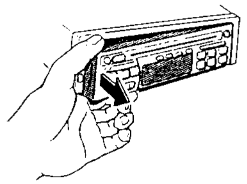
PWR

Press to turn off the power.

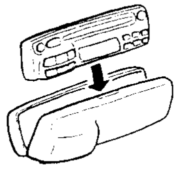
2

Press the release button until the front panel pops out.

3

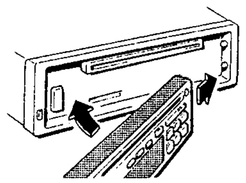


Grasp the left side of the front panel and pull it out.



Note: To protect the front panel, place it in the supplied case.

Attaching the Front Panel



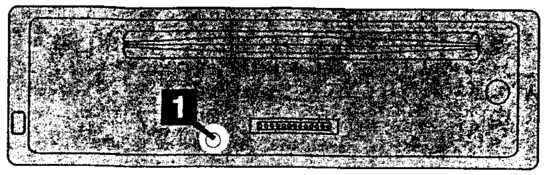
1

- Insert the right side of the front panel into the main unit first.
- Then push the front panel until it locks firmly in the main unit and a click sound is heard.

Note: Before attaching the front panel, make sure that there is no dirt or dust on the connector terminals.

Basic Operation

Initial System Start Up



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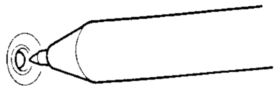
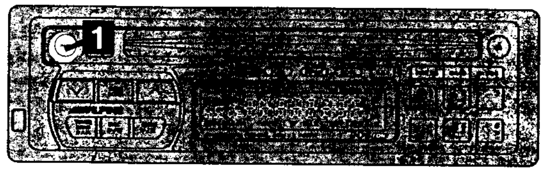


When operating the unit for the first time after installation or after the vehicle's battery has been disconnected and reconnected, set the volume level to its minimum, then remove the detachable front panel. Press the Reset switch with a ball-point pen or any other pointed object.

Turning Power On and Off



1

PWR

Press to turn on the unit.

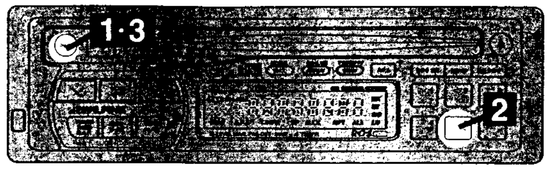
Note: The unit can be turned on by pressing any other button except the eject button.

PWR

Press again to turn off the unit.

Basic Operation

Switching Colour of Lighting



1

PWR

Press for more than **2** seconds to activate the colour switching mode.

2

5

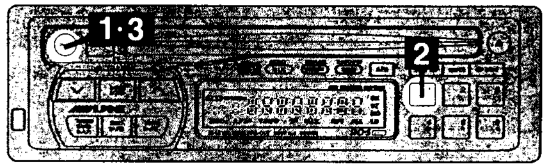
Press to change the colour of lighting between green and amber.

3

PWR

Press to deactivate the colour switching mode.

Adjusting Source Signal Levels



If the difference in volume level between the CD player and FM radio is too great, adjust as follows.

1

PWR

Press for more than **2** seconds.

2

1

Press to select the FM signal level "H" (High) or "L" (Low) to make the signal levels between the FM band and CD player closer.

FM-LV H

↕

FM-LV L

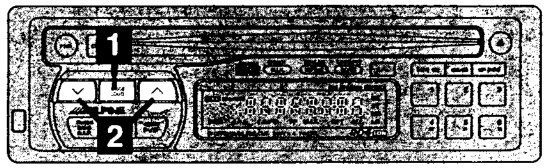
3

PWR

Press to cancel the adjusting mode.

Basic Operation

Adjusting Volume/Treble/Bass/Balance/Fader



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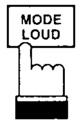
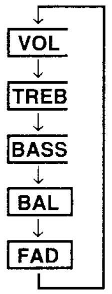
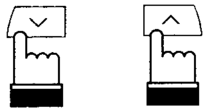




Press repeatedly to choose the desired mode.

Note: If the ∨ or ∧ button is not pressed in 5 seconds after selecting the TREB, BASS, BAL and FAD modes, the unit automatically sets in the VOL mode.

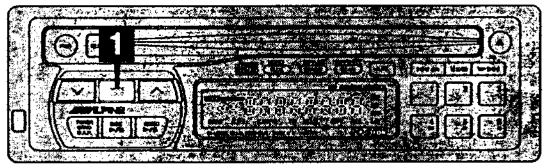
2



Press these buttons until the desired sound is obtained in each mode.

Note: When these buttons are pressed hard, the level changes quickly. The settings of the Bass and Treble will be individually memorized for each source (FM, MW, LW and CD) untill the setting is changed.

Turning Loudness On/Off



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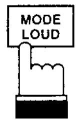
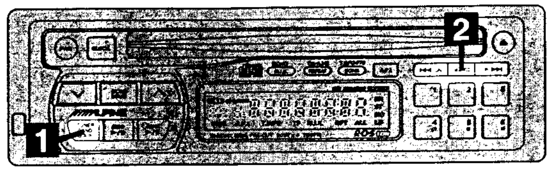


LD

Press for more than **2** seconds to activate or deactivate the loudness mode.

Radio Operation

Manual Tuning



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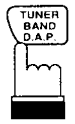
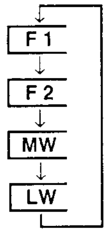
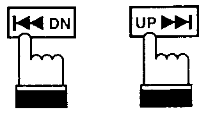




Press repeatedly until the desired radio band is displayed.

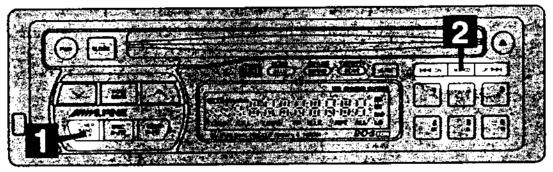
2



F 1 90.10

Press the |◀◀ DN or UP ▶▶| button to move down or up one step respectively until the desired station frequency is displayed.

Automatic Seek Tuning



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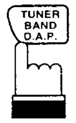
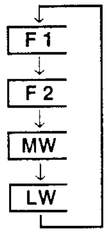
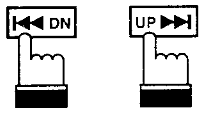




Press repeatedly until the desired radio band is displayed.

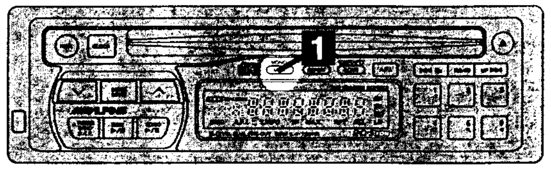
2



Press and hold down the |◀◀ DN button or UP ▶▶| button for more than **0.5** seconds to automatically tune downward or upward respectively.
When the radio finds a station, it stops.
To automatically move to the next station, press the button for more than **0.5** seconds.

Radio Operation

Mono/Stereo Switching



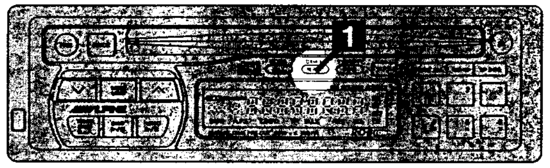
1

"ST" indicator appeares when a stereo FM station is tuned in.

F 1 101.50 ST
↕
F 1 101.50 MO

Press to switch from the stereo mode to the monaural mode to reduce the noise level of noisy stereo broadcast due to weak signal.
In the monaural mode, the MO indicator appears.
Press again to return to the stereo mode.

Radio Station Auto-Seek Sensitivity



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DX•A.ME
REPEAT

DX

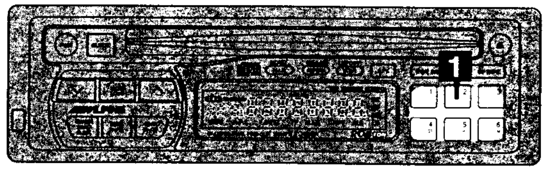
Press in the radio mode until the DX indicator appears to activate the DX (distance) mode to receive both strong and weak radio stations in the Auto-Seek operation.

DX•A.ME
REPEAT

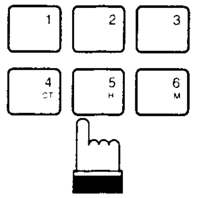
To return to the local mode to receive only strong radio stations in the area, press the button until the DX indicator disappears.

Radio Operation

Manual Storing of Station Presets



1

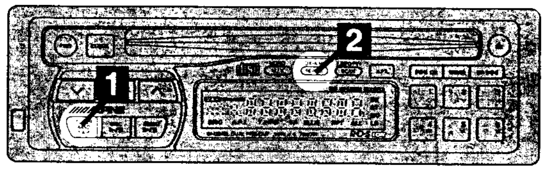


1. Tune in the desired radio station you wish to store in the preset memory.
2. Press one of the preset location number buttons (1 through 6), into which you wish to store the station, for more than **2** seconds until the display blinks.
3. Press the same button again while the button is blinking (within 5 seconds).
   The display changes from blinking to steady lighting indicating that the station is memorized.
4. Repeat the procedure to store 5 other stations onto the same band.

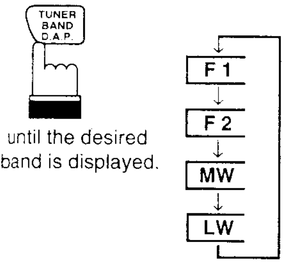
A total of 30 stations can be stored in the preset memory (6 stations for each band; F1, F2, MW, LW and D.A.P.). The RDS stations can be preset in the F1, F2 and D.A.P. bands only.

Note: If a preset memory has already been set in the same preset location, it will be cleared and the new station will be memorized.

Automatic Memory of Station Presets

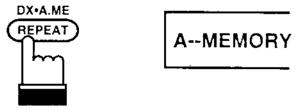


1



Press until the desired radio band is displayed.

2

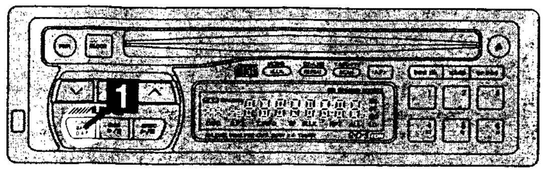


Press for more than **2** seconds.
The tuner will automatically seek and store 6 strong stations in the selected band in order of signal strength.
When the automatic storing has been completed, the tuner goes to the station stored in the preset location No. 1.

Note: If no stations are stored, the tuner will return to the original station you were listening to before the auto storing procedure began.

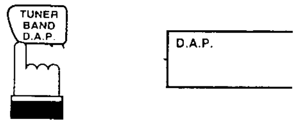
Radio Operation

Storing into Direct Access Preset (D.A.P.) Band



A combination of radio stations in any bands (up to 6 stations) can be preset onto the D.A.P. band.

1

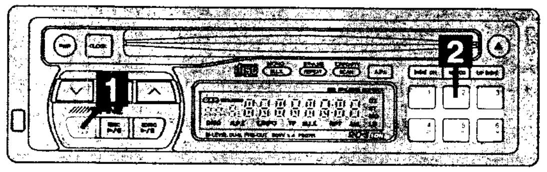


Press for more than 2 seconds until the D.A.P. indicator appears.

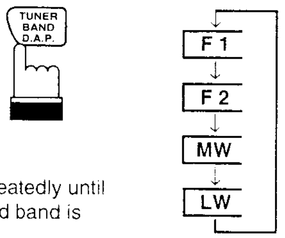
To memorize the stations onto the D.A.P. band, follow the steps for the Automatic or Manual Storing of Station Presets section above.

Note: This function can be used together with the Automatic Memory Preset.

Accessing Preset Stations

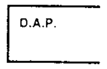


1

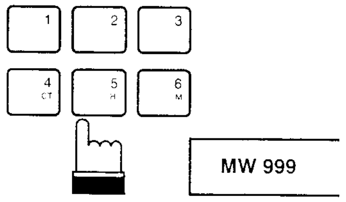


Press repeatedly until the desired band is displayed.

To select the D.A.P. band, press and hold for more than **2** seconds until the D.A.P. indicator appears.



2

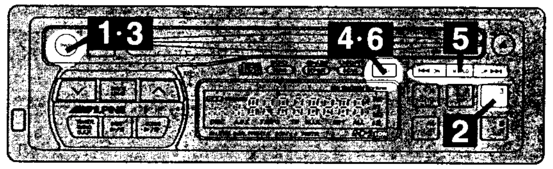


Press the station preset button that has your desired radio station in memory. The display shows the band and frequency of the station.

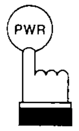
RDS Operation

The RDS (Radio Data System) is a radio information system using the 57 kHz subcarrier of regular FM broadcast. The RDS allows you to receive a variety of information such as traffic information, station names, and to automatically re-tune to a stronger transmitter that is broadcasting the same programme.

Setting RDS Reception Mode and Receiving

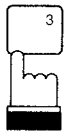


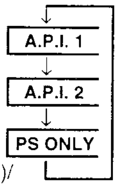
1



Press for more than 2 seconds.

2

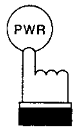




Press repeatedly to select the desired A.P.I. (Automatic Programme Identification)/ PS (Programme Service Name) mode.

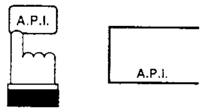
Note: Use the A.P.I. 2 mode only when errors occur in the A.P.I. 1 mode because too many FM stations are present.
In the A.P.I. 2 mode, it requires about **1** second for tuning.
Use the PS ONLY mode when automatic re-tuning is not required.

3



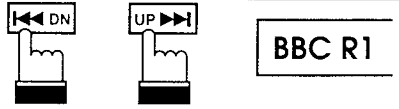
Press to activate the selected mode.

4



Press to activate the RDS mode.

5

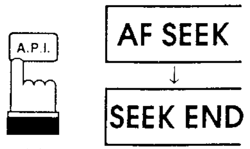


Press the ⏮ DN or UP ⏭ button to tune in the desired RDS station.

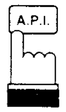
When the station signal being received has become weak;

A. In the A.P.I. 1 or A.P.I. 2 mode the unit automatically re-tunes to a stronger station that carries the same programme.

B. In the PS ONLY mode
Press for more than **2** seconds to have the unit automatically search for a stronger station in the AF (Alternative Frequencies) list.
If there is no AF station, the display shows "SEEK END."



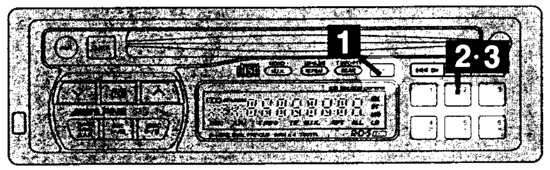
6



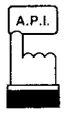
Press again to deactivate the RDS mode.

RDS Operation

Recalling Preset RDS Stations

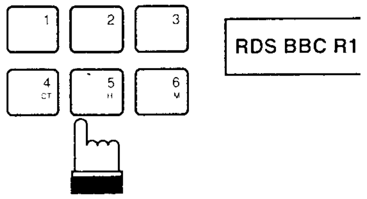


1



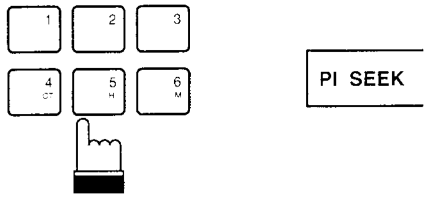
Press to activate the RDS mode.

2



Press the preset location button in which your desired RDS station is preset. If the preset station's signal is weak, the unit automatically searches and tunes to a stronger station in the AF (Alternative Frequencies) list.

3 If the preset station and the stations in the AF list cannot be received:

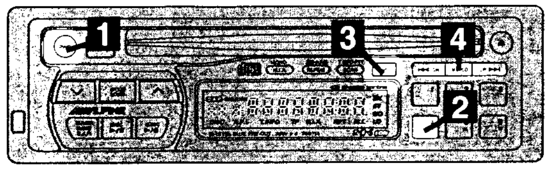


Press the same preset location button again to search again for a station in the PI (Programme Identification) code.
If there are still no stations receivable in the area, the unit displays the frequency of the preset station and the preset indicator disappears.

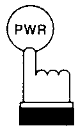
Note: For presetting the RDS stations, refer to the Radio Operation section.

RDS Operation

Receiving RDS Regional (Local) Stations

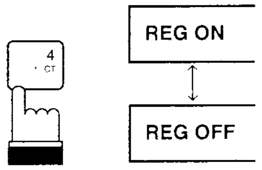


1



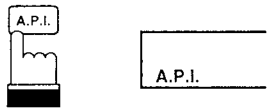
Press for more than **2** seconds.

2



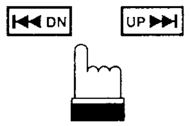
Press to turn on or off the REG mode.
In the REG ON mode, the unit automatically keeps receiving the related local RDS station.

3



Press to activate the RDS mode.

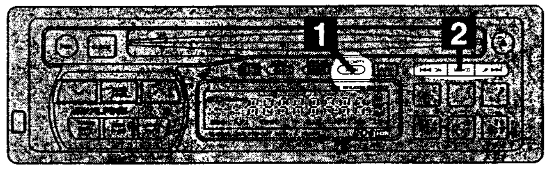
4



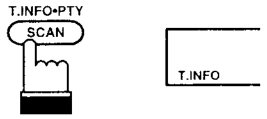
Press to tune in the desired local (regional) RDS station.

RDS Operation

Receiving Traffic Information

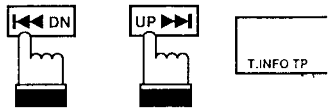


1



Press to display the T.INFO indicator.

2



Press the I◀◀ DN or UP ▶▶I button to select your desired traffic information station. When a traffic information station is tuned in, the TP indicator lights up.

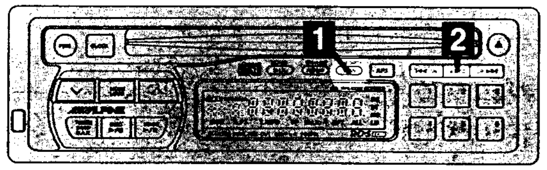
Traffic information is heard only when it is being broadcast. If traffic information is not being broadcast, the unit is set in the standby mode. When a traffic information broadcast begins, the unit automatically receives it and the display shows "TRF INFO."

When traffic information broadcast is over, the unit will automatically set in the standby mode.

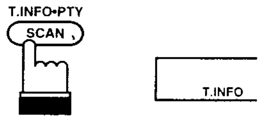
Note: If the traffic information broadcast signal falls below a certain level, the unit remains in the receiving mode for 1 minute. If the signal remains below a certain level for over 1 minute, the unit is set in the standby mode for the traffic information broadcast.

RDS Operation

Receiving Traffic Information While Playing CD or Radio



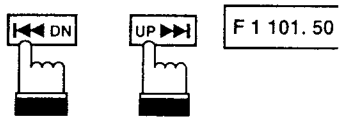
1



Press until the T.INFO indicator appears.

Note: If you are listening to a CD, the display will show the radio station you were playing before CD play for **5** seconds.

2



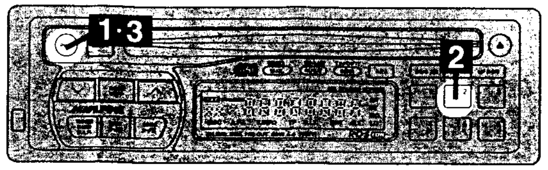
Press to select a traffic information station if necessary.

- When a traffic information broadcast starts, the unit automatically places the CD player in the pause mode or stops receiving the regular FM signal. The volume level rises to the preset level if you were listening to CD or FM at a low level.
- When the traffic information broadcast finishes, the unit automatically returns to the original source play before the traffic information broadcast began.

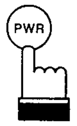
Note: The 7807R is equipped with the EON (Enhanced Other Networks) function in order to keep track of additional alternative frequencies to the AF list. If the station being received does not broadcast the traffic information, the 7807R automatically tunes in the related station that broadcasts the traffic information when it occurs.

RDS Operation

Presetting Volume Level for Traffic Information

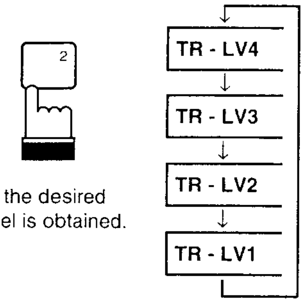


1



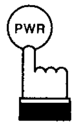
Press for more than **2** seconds.

2



Press until the desired volume level is obtained.

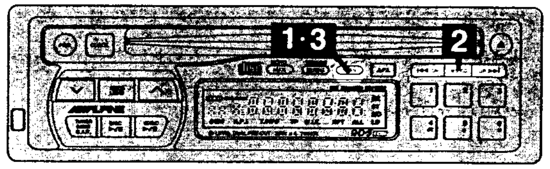
3



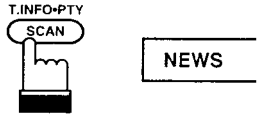
Press again to preset the volume level for the traffic information listening.

RDS Operation

PTY Tuning



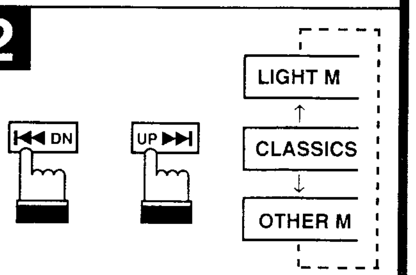
1



Press for more than **2** seconds.
The PTY (Programme Type) of the station being currently received will be displayed for 5 seconds.
If there is no receivable PTY data, "NONE" will be displayed for **5** seconds.

Note: If no button is pressed within 5 seconds after pressing the PTY button, the PTY mode will be automatically cancelled.

2



Press within **5** seconds to choose the desired program type while the PTY programme type is being displayed.

The tuner starts searching for a station in the chosen programme type after 3 seconds.
The chosen programme type indicator blinks during searching and lights when a station is found.

If no station is found, "NO PTY" will be displayed for 5 seconds.

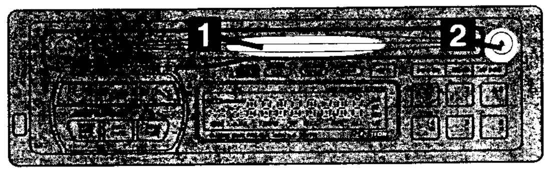
3

T.INFO•PTY
SCAN

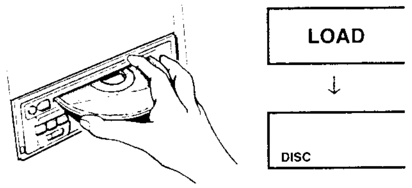
Press for a second time to cancel the PTY mode.

CD Operation

Inserting/Ejecting Disc



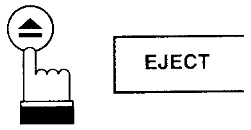
1



Insert a disc half way into the slot with the label side facing up. The player automatically draws the disc into the disc compartment.
The DISC indicator appears to tell a disc is loaded.

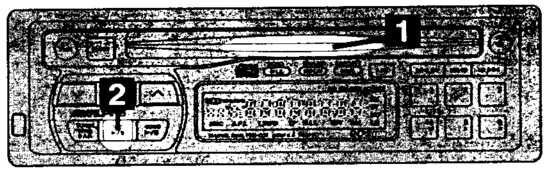
Note: You can insert a 3-inch CD without using an adaptor ring.

2

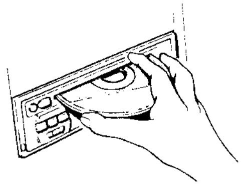


Press when you want to eject the CD.

Normal Play

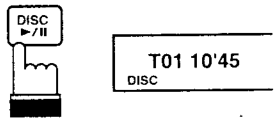


1



Insert a CD. The CD player begins playback from the first track on the disc. The display shows the track number and elapsed time of the track being played. When the last track is played back the player returns to the first track and begins playback from that point.

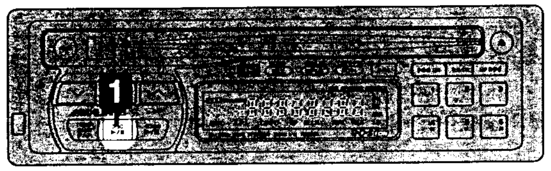
2


DISC ►/II
T01 10'45
DISC

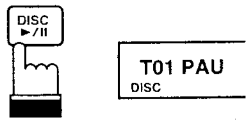
Press to pause or start CD play.

CD Operation

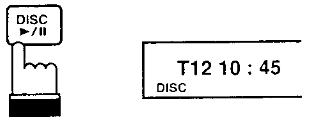
Pause



1

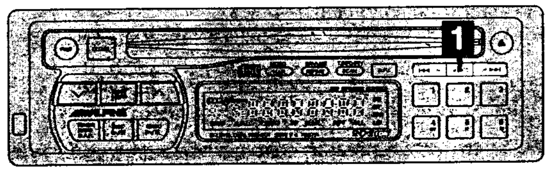

DISC ►/II
T01 PAU
DISC

Press to temporarily stop CD playback.

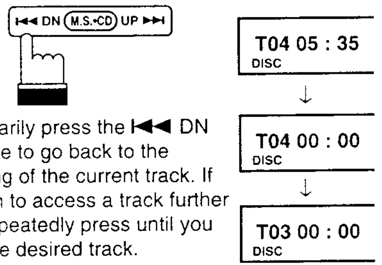

DISC ►/II
T12 10 : 45
DISC

To resume playback, press again.

Music Sensor (Skip)

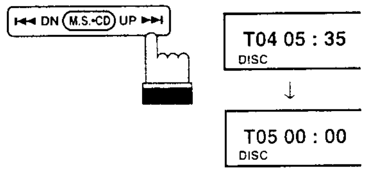


1


|◄◄ DN (M.S.•CD) UP ►►|
T04 05 : 35
DISC
↓
T04 00 : 00
DISC
↓
T03 00 : 00
DISC

Momentarily press the |◄◄ DN side once to go back to the beginning of the current track. If you wish to access a track further back, repeatedly press until you reach the desired track.
(The display example shows when you are playing the track No. 4.)

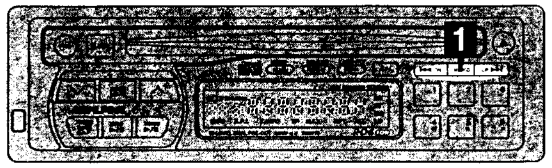
Note: The music sensor feature is functional in the play or pause mode.


|◄◄ DN (M.S.•CD) UP ►►|
T04 05 : 35
DISC
↓
T05 00 : 00
DISC

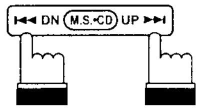
Press the UP ►►| side once to advance to the beginning of the next track. If you wish to access a track further ahead, press repeatedly until the desired track is reached.

CD Operation

Fast Forward and Backward



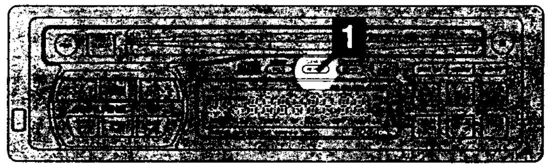
1



Press and hold the |◄◄ DN side or UP ►►| side to quickly move backward or forward respectively until you reach the desired portion.

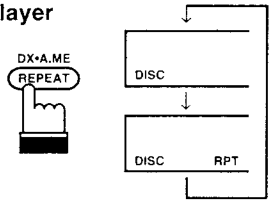
Note: This feature works only in the CD playback mode.

Repeat Play

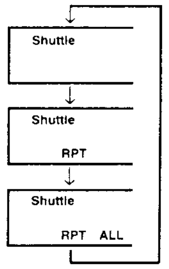


1

CD Player


DX•A.ME
REPEAT
DISC
↓
DISC RPT

CD Shuttle (Optional)

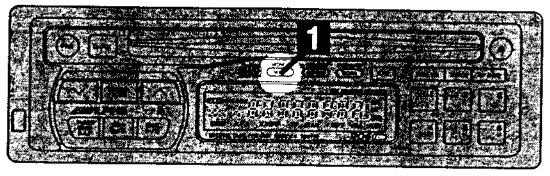

Shuttle
↓
Shuttle
RPT
↓
Shuttle
RPT ALL

Press to play back repeatedly the track being played. The RPT indicator appears and the track will be played repeatedly. Press again to deactivate the repeat play .

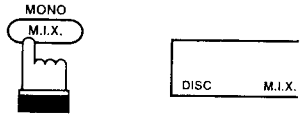
Note: If a CD Shuttle is connected and the RPT ALL mode is selected, the unit repeatedly playes back all the tracks on the disc selected.

CD Operation

M.I.X. (Random) Play

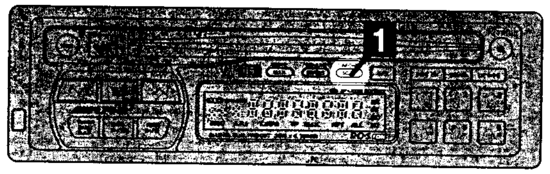


1

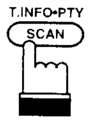

MONO
M.I.X.
DISC
M.I.X.

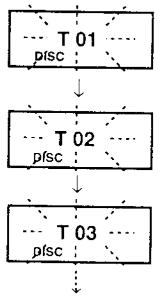
Press in the play or pause mode until the M.I.X. indication appears. The tracks on the disc will be played back in a random sequence.
After all the tracks on the disc have been played back once, the player will begin a new random sequence play until the M.I.X. mode is cancelled.
Press the button again until the M.I.X. indicator disappears to cancel the M.I.X. play.

Scan Play



1


T.INFO•PTY
SCAN

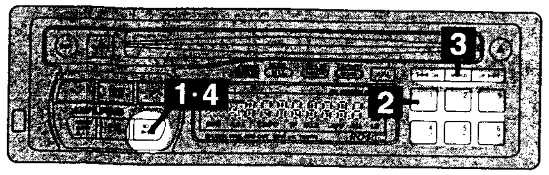

T 01
DISC
T 02
DISC
T 03
DISC

Press for more than **2** seconds to play the first 10 seconds of each track on the disc in succession.

Press the button again for more than **2** seconds to deactivate the scan play.

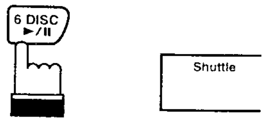
CD Operation

Controlling 6-Disc CD Shuttle (Optional)



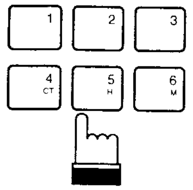
If an Alpine 6-disc CD Shuttle is connected to the 7807R, you can control the CD Shuttle using this unit.

1


6 DISC
►/II
Shuttle

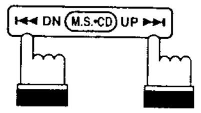
Press to activate the connected CD Shuttle.

2


1
2
3
4
CT
5
H
6
M

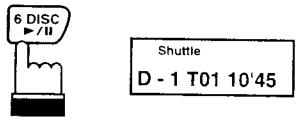
Press these buttons to select the desired disc loaded in the CD Shuttle.

3


I◄◄ DN
M.S.•CD
UP ►►I

Press to select the desired track on the selected disc.

4

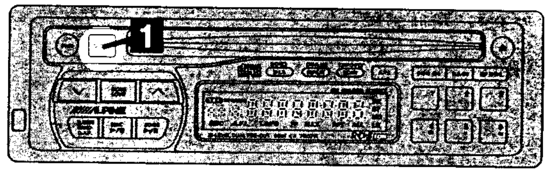

6 DISC
►/II
Shuttle
D - 1 T01 10'45

Press to play back the selected track. Press again to pause playback.

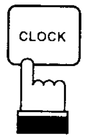
Note: Other CD Shuttle operations are the same as the 7807R CD player.

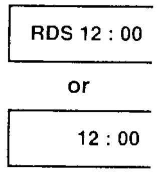
Clock Operation

Displaying Time



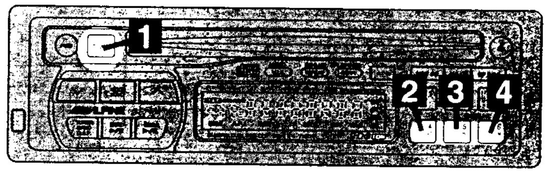
1



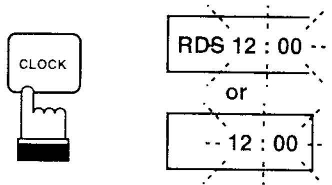

RDS 12 : 00
or
12 : 00

Press momentarily to display the time.
The 7807R can display the RDS time or normal clock time.

Selecting Time and Setting Normal Clock

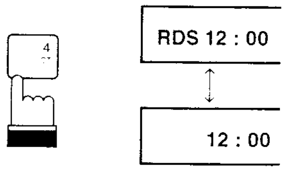


1


CLOCK
RDS 12 : 00
or
12 : 00

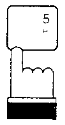
Press for more than 3 seconds until the time indication blinks.

2

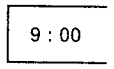

4
RDS 12 : 00
12 : 00

Press to select the RDS time or normal clock time.
The selected time is set 5 seconds after selecting.

3

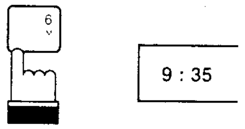


Example: To adjust to 9 : 35



Press the "H" button to adjust the hours after selecting the normal clock time.

4

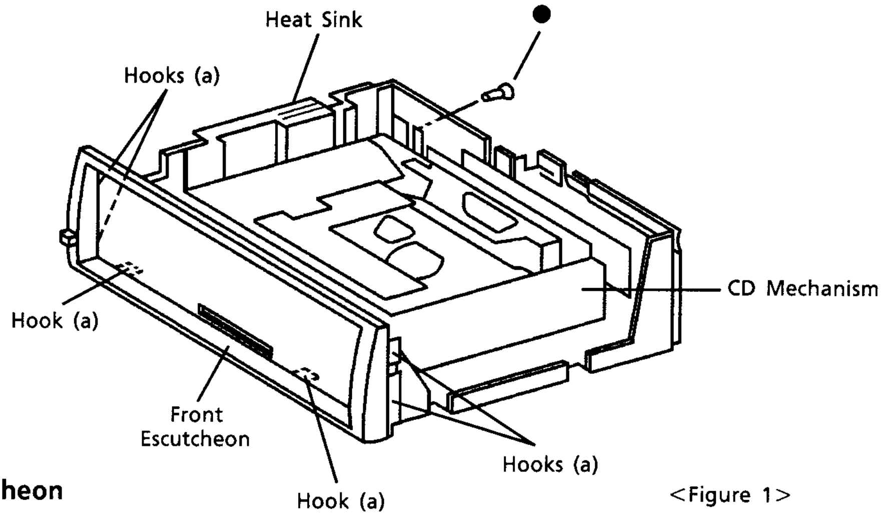


Press the "M" button to adjust the minutes. The time is set 5 seconds after adjusting the minutes.

Disassembly Instructions

1. Removal of Nose Unit

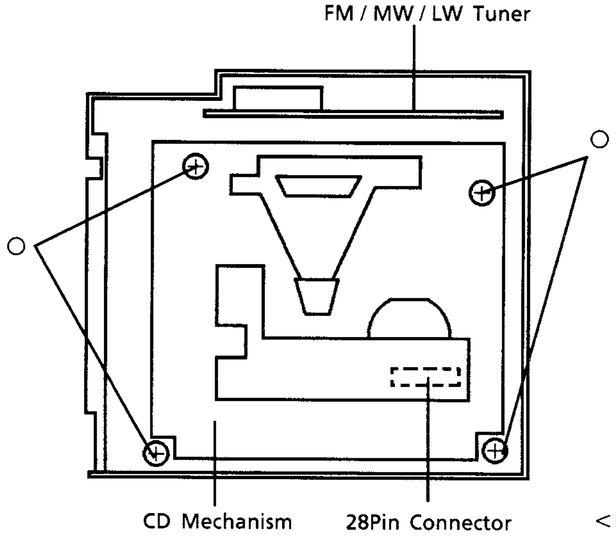
(1) Refer to the Detachable Front Panel (P. 9).


Heat Sink
●
Hooks (a)
CD Mechanism
Hook (a)
Front Escutcheon
Hooks (a)
Hook (a)

<Figure 1>

2. Removal of Front Escutcheon

(1) After removal of Top Cover, remove six Hooks (a) as shown in Figure 1.


FM / MW / LW Tuner
○
○
CD Mechanism
28Pin Connector

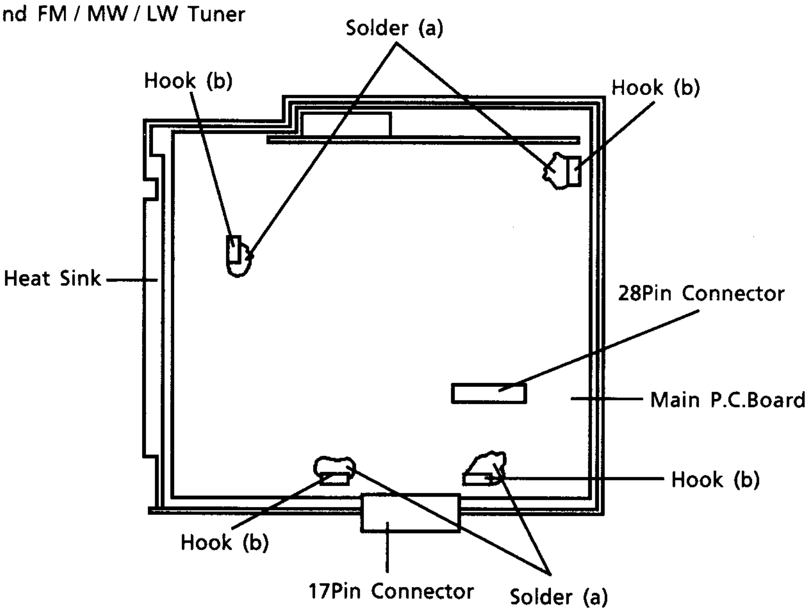
<Figure 2>

3. Removal of the CD Mechanism

(1) After removal of the Front Escutcheon, remove four screws marked "○" as shown in Figure 2.
(2) Disconnect one connector (28 Pin) from the CD Mechanism.

4. Removal of Main P.C.Board

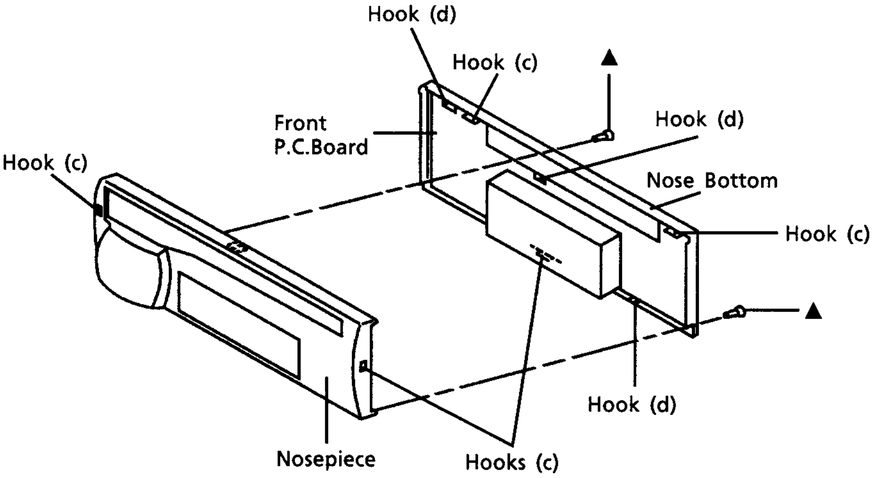
(1) After removal of the CD Mechanism, remove Solder (a) and four Hooks (b) as shown in Figure 3.
(2) Remove a screw marked "●" as shown in Figure 1.
(3) Main P.C.Board with Heat Sink and FM / MW / LW Tuner can be removed completely.


Solder (a)
Hook (b)
Hook (b)
Heat Sink
28Pin Connector
Main P.C.Board
Hook (b)
Hook (b)
17Pin Connector
Solder (a)

<Figure 3>

5. Removal of Front P.C.Board

(1) After removal of Nose Unit, remove two screws marked "▲" and five Hooks (c) as shown in Figure 4.
(2) Remove three Hooks (d) as shown in Figure 4.

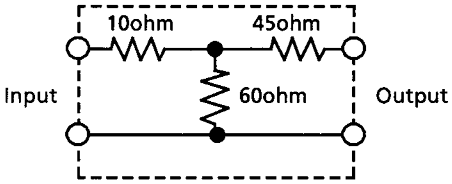

Hook (d)
Hook (c)
▲
Front P.C.Board
Hook (d)
Hook (c)
Nose Bottom
Hook (c)
▲
Hook (d)
Nosepiece
Hooks (c)

<Figure 4>

Adjustment Procedures

1 FM SECTION

(1) Dummy Antenna Circuit


10ohm
45ohm
Input
60ohm
Output

For 50 ohm FM Signal Generator

Figure 5

(2) Connections

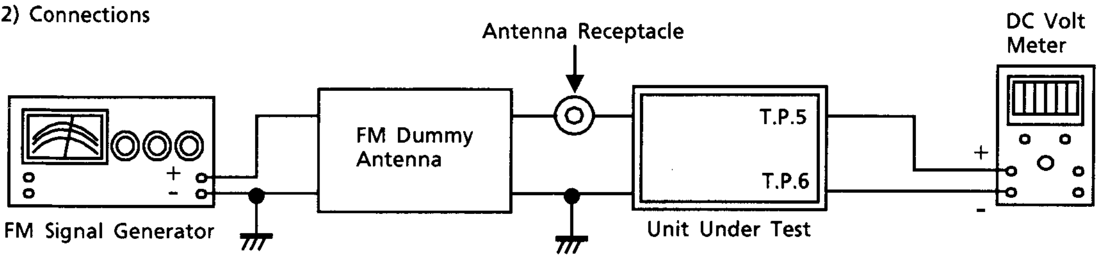

Antenna Receptacle
DC Volt Meter
FM Dummy Antenna
T.P.5
T.P.6
+
-
FM Signal Generator
Unit Under Test

Figure 6

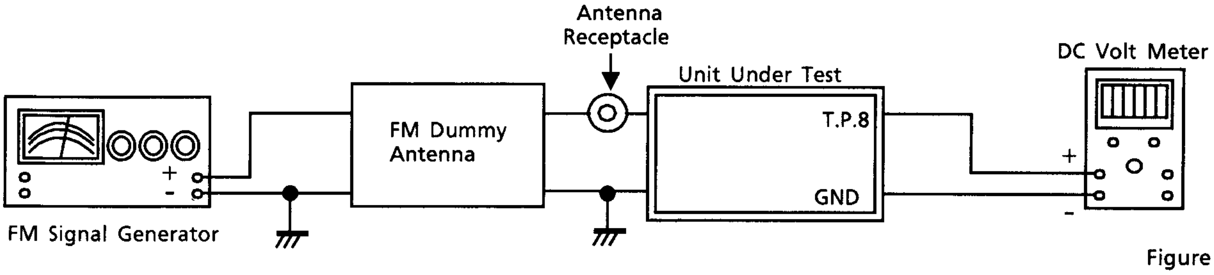

Antenna Receptacle
DC Volt Meter
Unit Under Test
FM Dummy Antenna
T.P.8
GND
+
-
FM Signal Generator

Figure 7

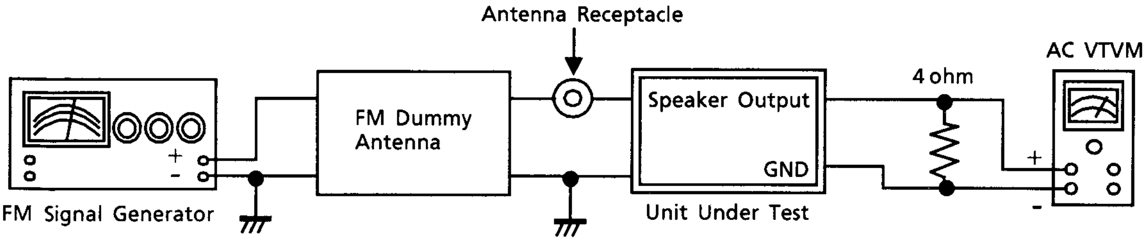

Antenna Receptacle
AC VTVM
4 ohm
FM Dummy Antenna
Speaker Output
GND
+
-
FM Signal Generator
Unit Under Test

Figure 8

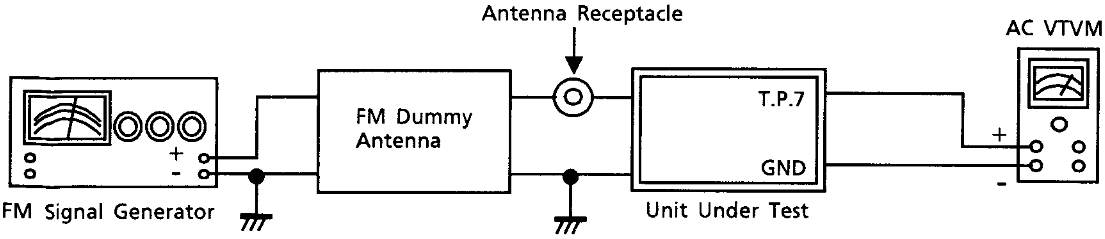

Antenna Receptacle
AC VTVM
FM Dummy Antenna
T.P.7
GND
+
-
FM Signal Generator
Unit Under Test

Figure 9

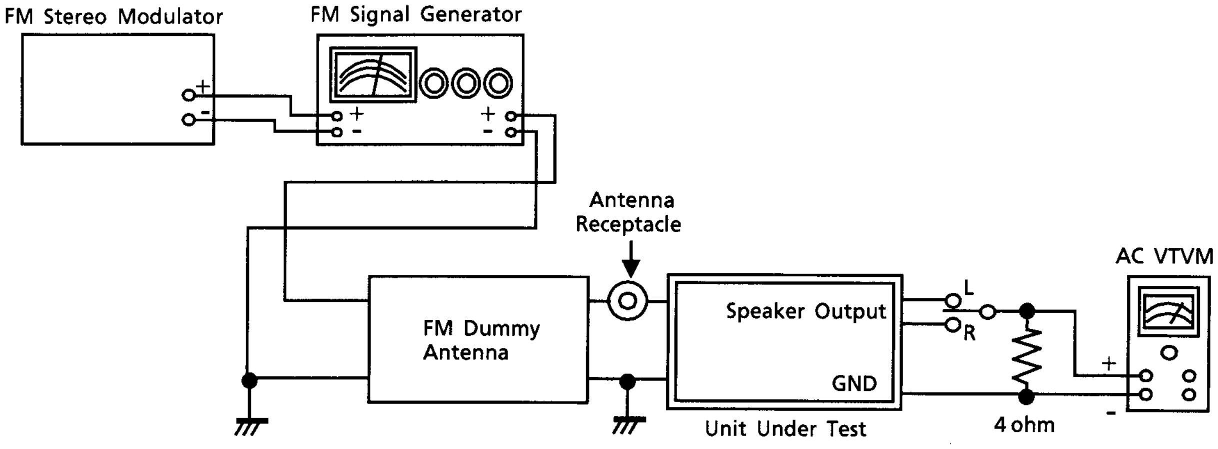

FM Stereo Modulator
FM Signal Generator
+
-
Antenna
Receptacle
AC VTVM
FM Dummy
Antenna
Speaker Output
GND
L
R
Unit Under Test
4 ohm

Figure 10

(3) Control Settings

Power Switch .... ON
Fader Control .... Center Position
Balance Control .... Center Position
Treble / Bass Control .... Center Position
Band Switch .... FM
Others .... OFF

(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	IF Adjustment		Figure 6	98.1MHz, 72dB (Mod. OFF)	98.1MHz	T.P.5 T.P.6	Adjust L2101 to 0±30mV.
2	Signal Meter Adjustment		Figure 7	98.1MHz, 46dB (Mod. 400Hz)	98.1MHz	T.P.8	Adjust VR2101 to 3±0.1V.
3	Noise Level Adjustment	(1)	Figure 8	98.1MHz, 72dB (Mod. 400Hz)	98.1MHz	Speaker Output	Adjust MAIN VOLUME to obtain 2V output. This value is 0dB.
		(2)	Figure 8	98.1MHz, - 19dB (Mod. 400Hz)	98.1MHz	Speaker Output	Adjust VR2106 to -30±5dB output at SG level minimum.
4	Seek Stop Adjustment		Figure 9	98.1MHz, 26dB (Mod. OFF)	98.1MHz	T.P.7	Adjust VR2105 to obtain 27±5dB.
5	Stereo Separation Adjustment (Lch)		Figure 10	98.1MHz, 72dB (Stereo 1kHz, Lch only)	98.1MHz	Speaker Output	Adjust VR2104 for Rch output to be minimum and confirm Lch and Rch output level difference is more than 20dB.

Step	Description	Connection	Signal Generator	Dial Control	Test Point	Adjustment
6	Stereo Blend Adjustment (Lch)	Figure 10	98.1MHz, 46dB (Stereo 1kHz, Lch only)	98.1MHz	Speaker Output	Adjust VR2102 for Lch and Rch output level difference to be 8dB.
7	Stereo Separation Adjustment (Rch)	Figure 10	98.1MHz, 72dB (Stereo 1kHz, Rch only)	98.1MHz	Speaker Output	Proceed same adjustment under step 5 by alternating Lch and Rch.
8	Stereo Blend Adjustment (Rch)	Figure 10	98.1MHz, 46dB (Stereo 1kHz, Rch only)	98.1MHz	Speaker Output	Proceed same adjustment under step 6.

2 Compact Disc SECTION

(1) Connections

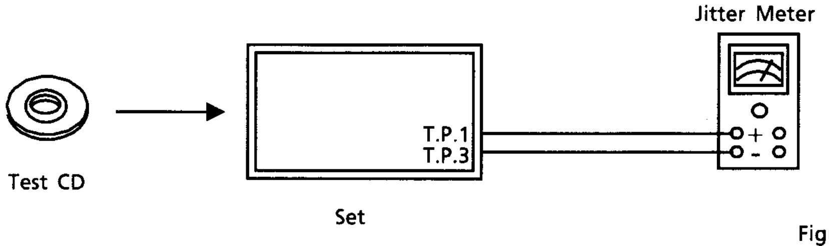

Jitter Meter
Test CD
T.P.1
T.P.3
Set
+
-

Figure 11

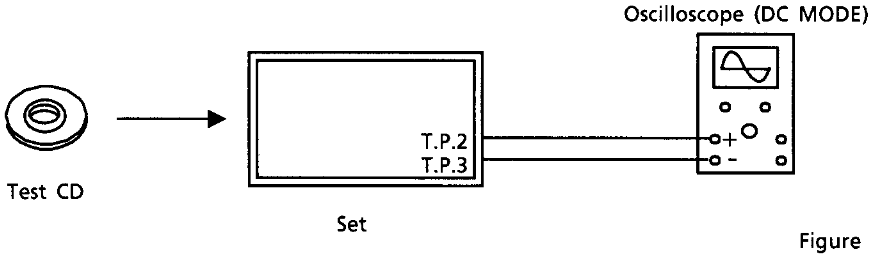

Oscilloscope (DC MODE)
Test CD
T.P.2
T.P.3
Set
+
-

Figure 12

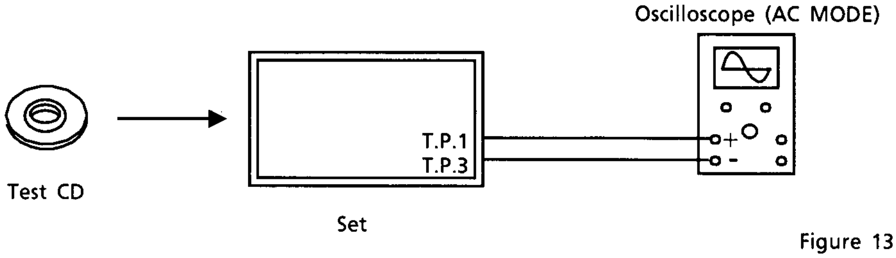

Oscilloscope (AC MODE)
Test CD
T.P.1
T.P.3
Set
+
-

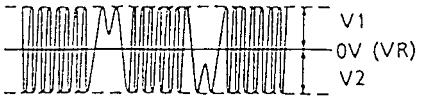
Figure 13

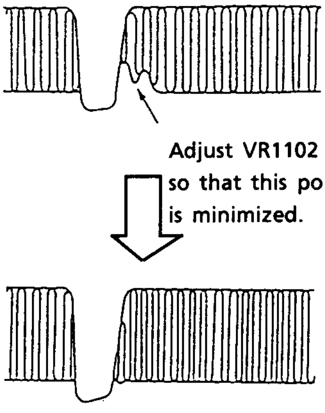
(2) Control Settings

Power SW	ON
Fader Control	Front
Balance Control	Mechanical Center
Treble / Bass Control	Mechanical Center
Others	OFF

(3) The necessaries for adjustment
DP - H Extension Cord
Assy., EX Cord Kit for DP-H Mechanism
Part No. 01E11375S01
See Adjustment Locations (Figure 14)

(4) Adjustment Procedures

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
1	Jitter Adjustment	TCD-782 Track No.1 (A-BEX)	Figure 11	T.P.1 T.P.3	VR1103	①: Set the mode to playback with the test disc loaded. ②: First, rotate VR1103 fully counter-clockwise. ③: Using the jitter meter, measure the T.P.1 signal. ④: Next, carefully rote VR1103 clockwise until the jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.
2	Tracking Balance Adjustment	TCD-782 Track No.1 (A-BEX)	Figure 12	T.P.2 T.P.3 T.P.4	VR1101	①: Set the mode to playback with the test disc loaded. ②: Use wire to connect T.P.3 to T.P.4. ③: Using the oscilloscope, measure the T.P.2 signal in reference to VR. (VR standard=0V) ④: Adjust VR1101 so that the positive and negative deflection widths of the T.P.2 signal are at the same level, relative to VR (0V). (The entire waveform moves up and down.)  ⑤: After adjustment, remove the wire connecting to T.P.3 to T.P.4

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
3	Tracking Offset Adjustment	TCD-721 Track No.6 (A-BEX)	Figure 13	T.P.1 T.P.3	VR1102	①: Set the mode to playback with the test disc loaded. ②: Using the oscilloscope, measure the T.P.1 signal. ③: Adjust VR1102 in order to minimum the waveform induced by the reaction to the omission of the T.P.1 signal. ④: Conduct the tracking balance adjustment once again.  Adjust VR1102 so that this portion is minimized.

Adjustment Locations

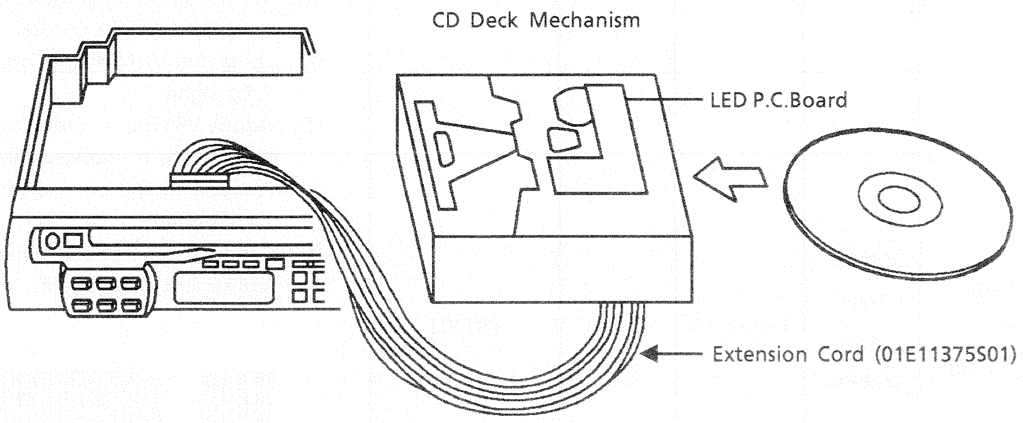
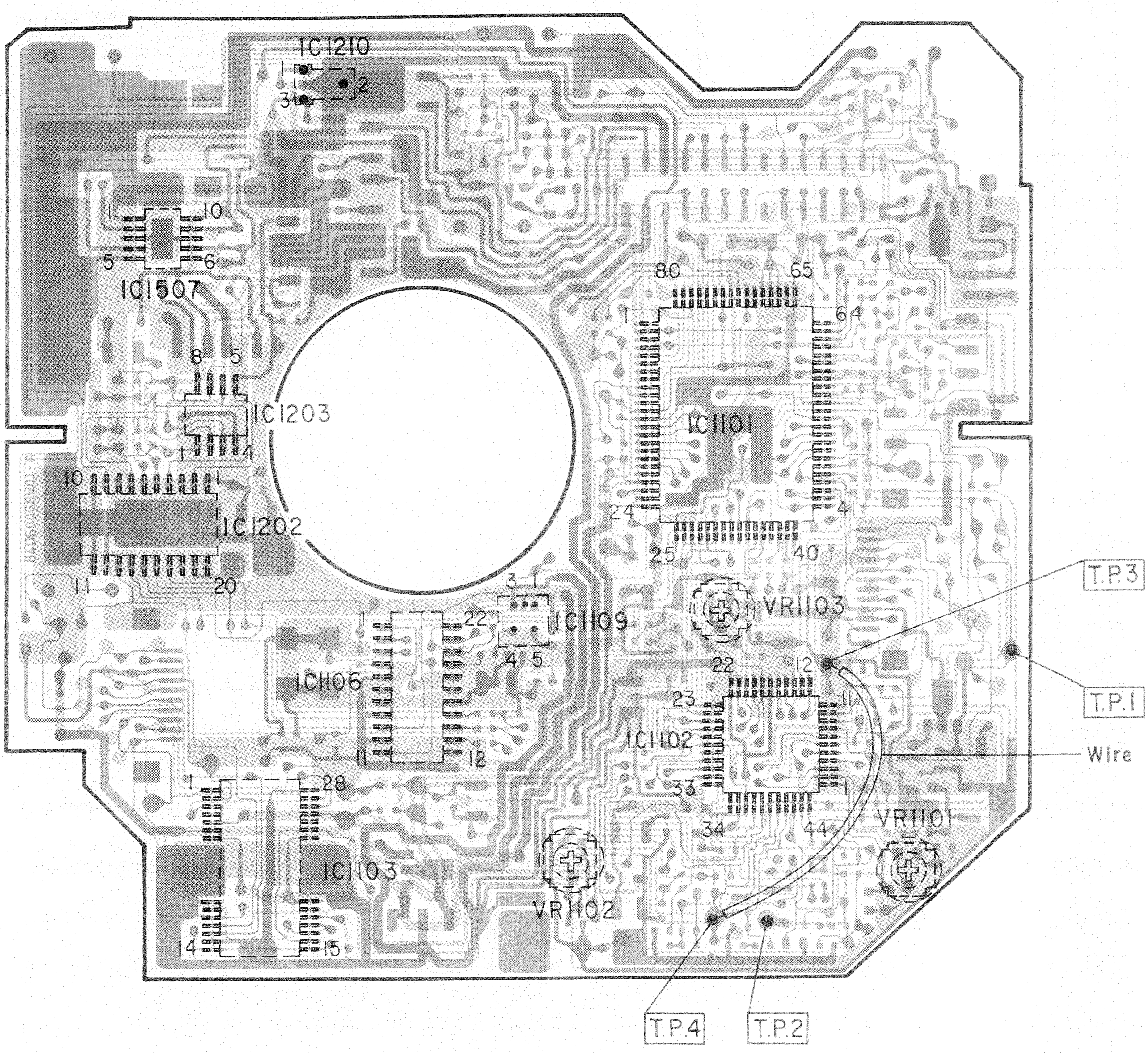
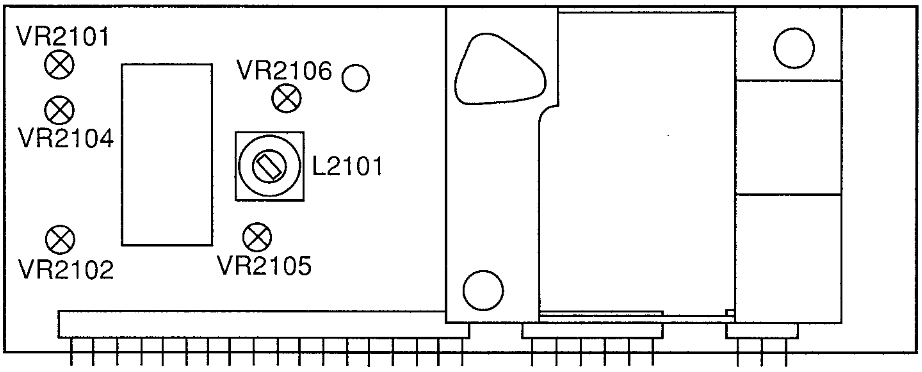

CD Deck Mechanism
LED P.C.Board
Extension Cord (01E11375S01)

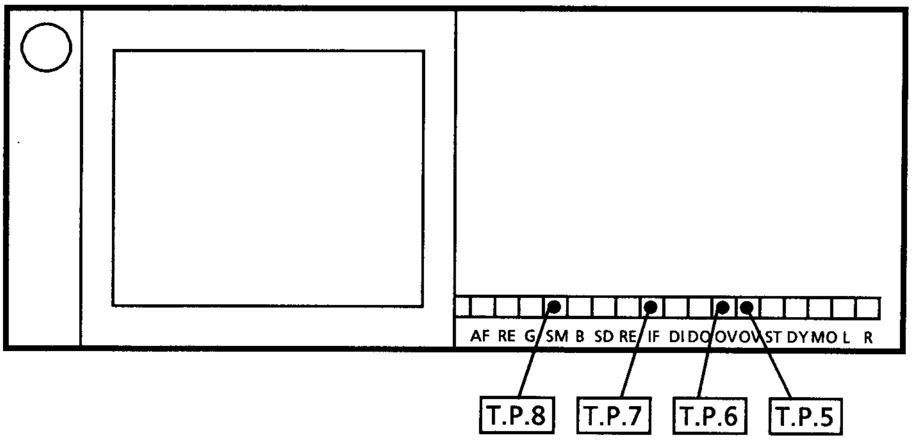
Figure 14


IC1210
IC1507
IC1203
IC1202
IC1101
IC1109
IC1106
IC1102
IC1103
VR1103
VR1102
VR1101
T.P.3
T.P.1
Wire
T.P.4
T.P.2

DP Main P.C. Board (Foil Side)


VR2101
VR2104
VR2102
VR2106
L2101
VR2105

FM/MW/LW Tuner Unit (FE001)


AF RE G SM B SD RE IF DI DO OV OV ST DY MO L R
T.P.8
T.P.7
T.P.6
T.P.5

FM / MW / LW Tuner Unit (FE001)
(Foil Side)

Description of IC Terminal

55384W05 (IC601)

No.	Symbol	I / O	Terminal Description
1	PH - D	I	8 cm END Detector.
2	PH - E	I	RELOAD Detector.
3	GND	—	GND.
4	GND	—	GND.
5	X2	—	SUB CLOCK 2.
6	X1	—	SUB CLOCK 1.
7	GND	—	GND.
8	OSC1	—	SYSTEM CLOCK 1 (7.15MHz).
9	OSC2	—	SYSTEM CLOCK 2 (7.15MHz).
10	$\overline{\text{RESET}}$	I	SYSTEM RESET Input.
11	A - HOLD	I	ACC ON / OFF Detector.
12	B - HOLD	I	BATT ON / OFF Detector.
13	CHNG - D - I	I	BUS LINE DATA Input.
14	$\overline{\text{IN - PAUSE}}$	I	IN - PAUSE Input.
15	$\overline{\text{IN - INT}}$	I	IN -INTERRUPT Input.
16	TP - ALM	O	TP OFF Alarm Output.
17	PULL - D	—	PULL - DOWN.
18	PULL - D	—	PULL - DOWN.
19	PULL - D	—	PULL - DOWN.
20	PULL - D	—	PULL - DOWN.
21	PULL - D	—	PULL - DOWN.
22	CHNG - D - O	O	BUS LINE DATA Output.
23	OUT - REM	O	OUT - REMOTE Output.
24	PULL - D	—	PULL - DOWN.
25	POW - ON	O	POWER - ON Output.
26	A - MUTE	O	AUDIO MUTE Output.
27	PULL - D	—	PULL - DOWN.
28	ALM ON	O	TP Alarm Switching Control.
29	PULL - D	—	PULL - DOWN.
30	VOL - CLK	O	VOLUME CLOCK Output.
31	VOL - DATA	O	VOLUME DATA Output.

No.	Symbol	I / O	Terminal Description
32	PULL - D	—	PULL - DOWN.
33	NOSE - POW	O	Power Supply Control Output.
34	POW - IC	O	POWER - IC Standby Control.
35	LCD - ON	O	LCD Back Light.
36	AMB / $\overline{\text{GRE}}$	O	AMBER / GREEN Switching.
37	KEY - P / S	O	Parallel / Serial Switching.
38	PULL - D	—	PULL - DOWN.
39	KEY - IN	I	KEY DATA Input.
40	AREA3	I	Area set up.
41	AREA2	I	Area set up.
42	AREA1	I	Area set up.
43	GND	—	GND.
44	GND	—	GND.
45	GND	—	GND.
46	$\overline{\text{CAM - END}}$	I	DISC Cramp Detector.
47	LOAD - FWD	O	LOADING MOTOR FWD Driving Output.
48	LOAD - BWD	O	LOADING MOTOR BWD Driving Output.
49	SOLNOID	O	Clamp solenoid drive Output.
50	PULL - D	—	PULL - DOWN.
51	PULL - D	—	PULL - DOWN.
52	F - CONT	O	FOCUS SERVO Gain Switching Terminal.
53	L - CONT	O	DISC Detector Power Supply Control.
54	V - CONT	O	Power Supply Control to CD.
55	5V	—	+5V.
56	BUS0	I / O	Command Data 0 to Servo Controller.
57	BUS1	I / O	Command Data 1 to Servo Controller.
58	BUS2	I / O	Command Data 2 to Servo Controller.
59	BUS3	I / O	Command Data 3 to Servo Controller.
60	BUSK	O	CLOCK Output to Servo Controller.
61	CCE	O	CE Output to Servo Controller.
62	LOCK	O	LOCK Status Input terminal.
63	$\overline{\text{LIMIT - SW}}$	I	LIMIT SW. Detector.
64	DTS - CE	O	DTS CE Output.
65	DTS - CLK	O	DTS CLOCK Output.

No.	Symbol	I / O	Terminal Description
66	DTS - STS	I	Serial DATA Signal Input.
67	DTS - CMD	O	Serial DATA Signal Output.
68	LCD - CLK	O	LCD CLOCK Output.
69	LCD - CE	O	LCD CE Output.
70	LCD - DATA	O	LCD DATA Output.
71	LCD - INH	O	LCD INH Output.
72	DTS - STAT	O	DTS STAT Output.
73	$\overline{\text{DTS - STBY}}$	O	DTS STBY Output.
74	AV_{CC}	—	Standard Voltage terminal for A / D Converter.
75	T-SENSE	I	Temperature Senser.
76	NOSE	I	NOSE Detector.
77	DTS - MUTE	I	DTS AUDIO MUTE Input.
78	PH - A	I	DISC IN Detector.
79	PH - B	I	EJECT - END Detector.
80	PH - C	I	8 cm DISC Detector.

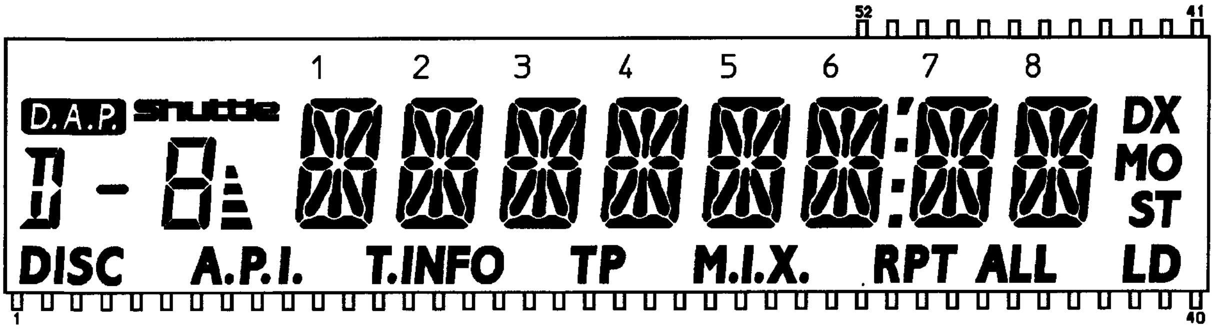
45258W01 (IC501)

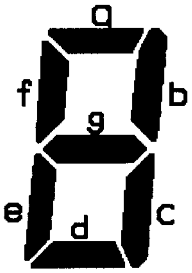
No.	Symbol	I / O	Terminal Description
1	CE1	O	CE1 control terminal.
2	NC	—	Open.
3	$\overline{\text{DTS MUTE}}$	O	Audio mute output terminal.
4	$\overline{\text{7073 RESET}}$	O	Control the reset for LC7073.
5	50KREF	O	High output when REF frequency becomes 50kHz in FM mode.
6	$\overline{\text{RESET}}$	I	System reset input terminal.
7	X2	O	Output terminal for system clock OSC.
8	X1	—	Output terminal for system clock OSC.
9	Vss	—	GND terminal for device.
10	SRAM CE2	O	CE2 control terminal.
11	A14	O	Input / Output terminal.
12	NC	—	Open.
13	NC		

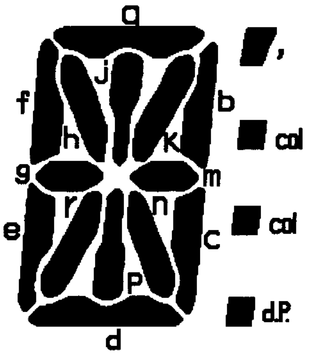
No.	Symbol	I / O	Terminal Description
14	NC	—	Open.
15	A10	O	Input / Output terminal for S · RAM address signal.
16	A9		
17	A8		
18	AD7	I / O	Input / Output terminal for S · RAM address signal.
19	AD6		
20	AD5		
21	AD4		
22	AD3		
23	AD2		
24	Vss	—	GND terminal for device.
25	AD1	I / O	Input / Output terminal for S · RAM address signal.
26	AD0		
27	LE	O	LE control terminal for latch.
28	DTS STBY	I	Return from standby to DTS.
29	RD CL	I	Communication data sync signal input terminal from LC7073.
30	RD ST	I	Data sync signal input terminal from LC7073.
31	DATA	I	Serial data input terminal from LC7073.
32	DI	I	Serial data input terminal.
33	A IN	I	Audio zero cross input terminal.
34	DTS - START	I	Command sync signal input from main microcomputer.
35	DTS - CMD	I	Serial data input terminal from main microcomputer.
36	NC	—	Open.
37	NC		
38	DTS - CLK	I	Communication data sync signal input terminal from main microcomputer.
39	DTS - STS	O	Serial data output terminal to main microcomputer.
40	$\overline{\text{EA}}$	I	Power supply terminal.
41	VDD	—	Power supply terminal for device.
42	AVss	—	GND terminal for A / D converter.
43	AVREF	I	Reference Voltage input terminal for A / D converter.
44	$\overline{\text{ST}}$	I	Stereo signal input terminal.
45	$\overline{\text{SK}}$	I	SK signal input terminal.
46	SERCH	I	Search start level detector port.
47	$\overline{\text{MALTI PATH}}$	I	Port detects multipath interference of station.

No.	Symbol	I / O	Terminal Description
48	$\overline{\text{ADJON}}$	I	Port detects multipath interference of station.
49	S. METER	I	Signal meter input terminal.
50	$\overline{\text{DK}}$	I	DK signal input terminal.
51	$\overline{\text{RDS}}$	I	RDS signal input terminal.
52	PLL CLK	O	Communication data sync signal output terminal.
53	PLL DO	O	Serial data output terminal.
54	$\overline{\text{LPE SW}}$	O	LPF time constant switching terminal to obtain fast response in AF search and FM seek operation.
55	IF MUTE	O	Mute output terminal to prevent shock noises in AF search operation.
56	PLL CE	O	Data communication control signal output terminal.
57	NC	—	Open.
58	LW	O	LW band selection terminal.
59	FM / $\overline{\text{AM}}$	O	FM / AM (MW / LW) bands selection terminal.
60	L / $\overline{\text{D}}$	O	SEEK sensitivity switch control output terminal.
61	MONO	O	Monaural ON / OFF control output terminal.
62	DTS CE	I	Terminal to make DTS in standby status.
63	SD	I	Station detector signal input terminal for FM / AM (MW / LW).
64	WR	O	F · RAM WE control signal.

LCD Display


52
41
1
2
3
4
5
6
7
8
D.A.P.
Shuttle
DX
MO
ST
DISC
A.P.I.
T.INFO
TP
M.I.X.
RPT ALL
LD
1
40



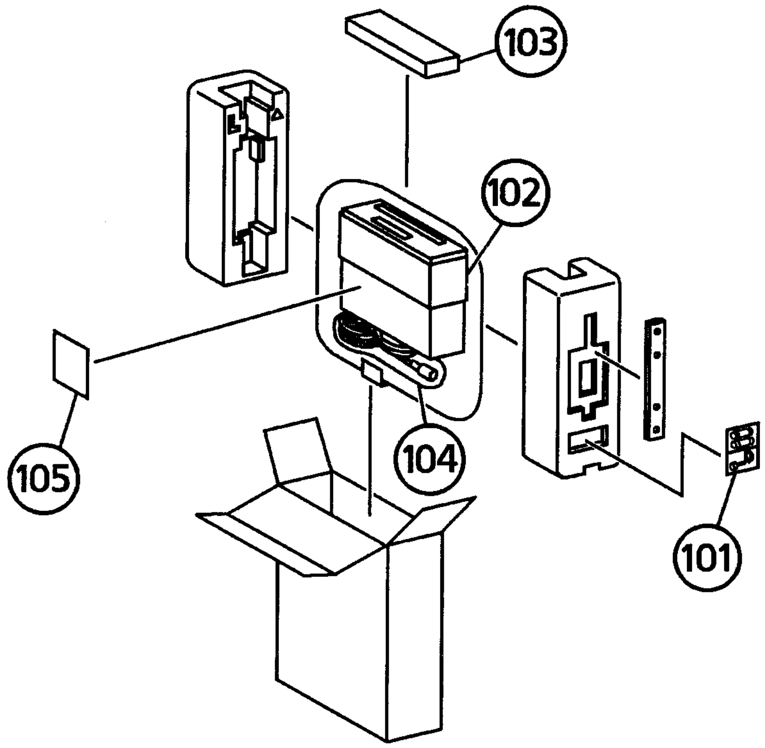

a
j
f
b
h
k
col
g
m
r
n
e
c
col
p
d.P.
d

PIN No.	com 1	com 2	com 3	PIN No.	com 1	com 2	com 3	PIN No.	com 1	com 2	com 3
1	com 1	—	—	18	3k	3m	3n	35	7b	7c	ALL
2	—	com 2	—	19	3b	3c	—	36	8h	8g	8r
3	—	—	com 3	20	4h	4g	4r	37	8f	8e	8d
4	D.A.P.	⊞-	DISC	21	4f	4e	4d	38	8k	8m	8n
5	1h	1g	1r	22	4b	4c	TP	39	8b	8c	LD
6	Shuttle	9f	9e	23	4k	4m	4n	40	DX	MO	ST
7	9a	9g	9d	24	5h	5g	5r	41	—	—	com 3
8	≡	9b	9c	25	5f	5e	5d	42	—	com 2	—
9	1f	1e	1d	26	5k	5m	5n	43	com 1	—	—
10	1b	1c	A.P.I.	27	5b	5c	M.I.X.	44	8a	8j	8p
11	1k	1m	1n	28	6h	6g	6r	45	7a	7j	7p
12	2h	2g	2r	29	6f	6e	6d	46	7h	7g	7r
13	2f	2e	2d	30	6k	6m	6n	47	6a	6j	6p
14	2b	2c	T.INFO	31	6b	6c	RPT	48	5a	5j	5p
15	2k	2m	2n	32	6′	6col.	6d.p.	49	4a	4j	4p
16	3h	3g	3r	33	7f	7e	7d	50	3a	3j	3p
17	3f	3e	3d	34	7k	7m	7n	51	2a	2j	2p
								52	1a	1j	1p

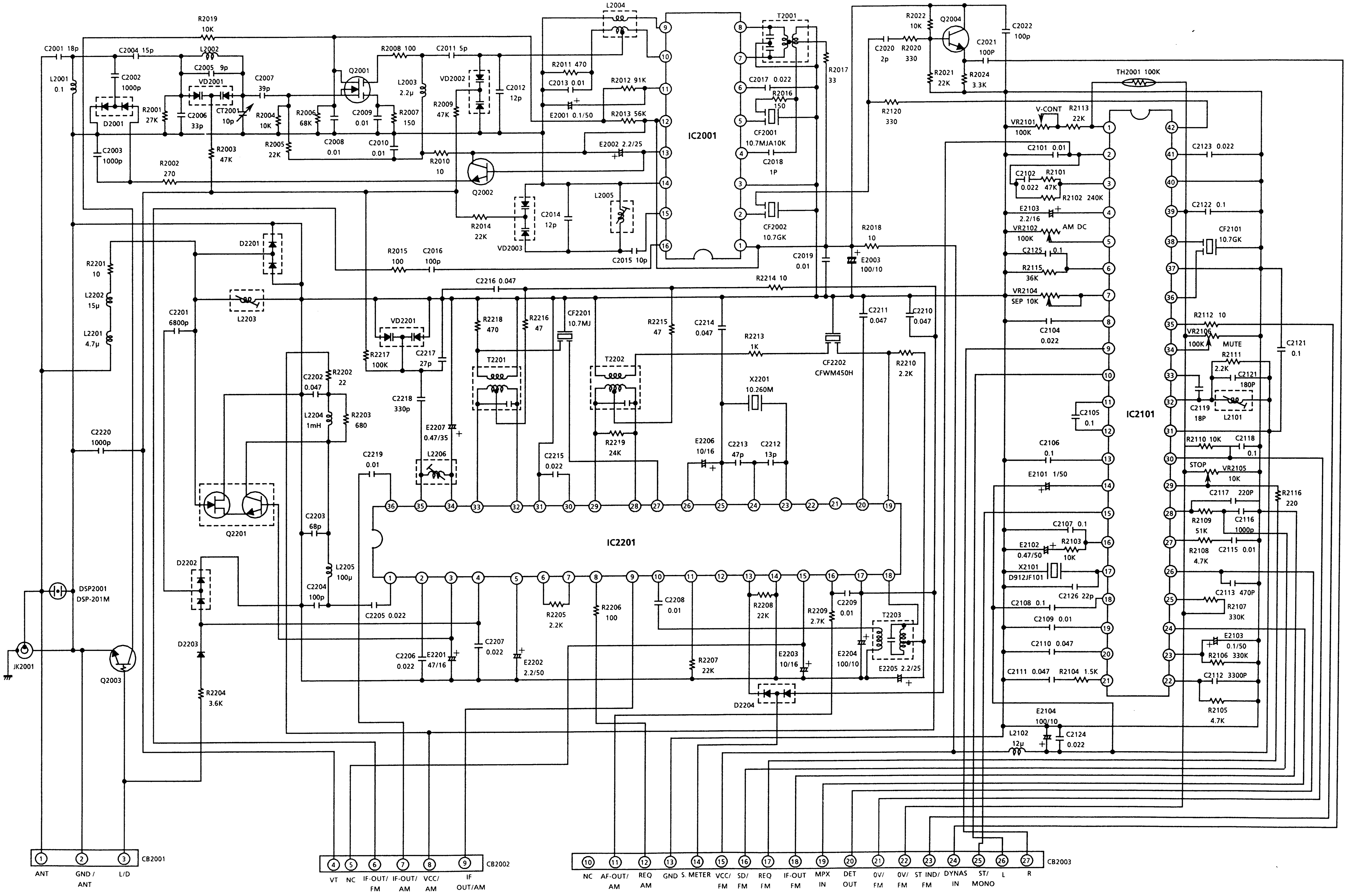
Packing Assembly Parts List

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
101	01V53600W33	Assy., Kit Installation			
102	15D50406W01	Case, Inner			
103	15D42040W01	Carrying, Case			
104	01T55176W07	Assy., Power Supply & SP. Output Connector			
105	68P50390W46	Owner's Manual			

Packing Method View

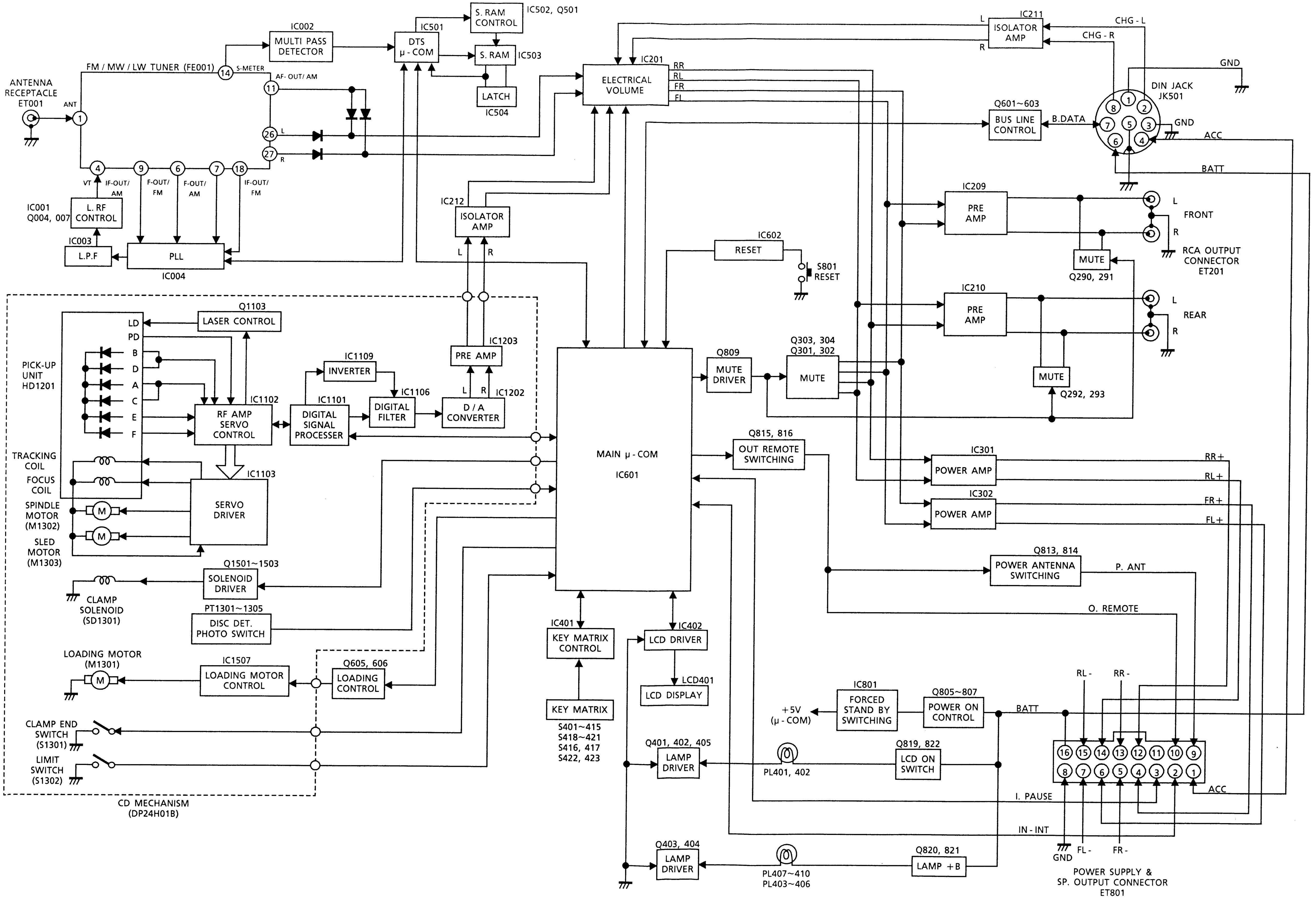


Tuner Schematic Diagram



C2001 18p
L2001 0.1
R2019 10K
C2004 15p
L2002
C2005 9p
C2002 1000p
VD2001
D2001
R2001 27K
C2006 33p
CT2001 10p
C2007 39p
R2004 10K
R2006 68K
R2003 47K
C2003 1000p
R2002 270
R2005 22K
C2008 0.01
Q2001
C2009 0.01
R2007 150
C2010 0.01
R2008 100
L2003 2.2µ
C2011 5p
VD2002
R2009 47K
C2012 12p
R2010 10
Q2002
L2004
R2011 470
C2013 0.01
R2012 91K
E2001 0.1/50
R2013 56K
E2002 2.2/25
IC2001
L2005
R2014 22K
C2014 12p
VD2003
R2015 100
C2016 100p
C2015 10p
T2001
R2017 33
C2017 0.022
R2016 150
CF2001 10.7MJA10K
C2018 1P
CF2002 10.7GK
C2019 0.01
R2018 10
E2003 100/10
R2214 10
R2022 10K
Q2004
C2020 2p
R2020 330
R2021 22K
R2024 3.3K
C2021 100P
C2022 100p
R2120 330
TH2001 100K
D2201
R2201 10
L2202 15µ
L2201 4.7µ
L2203
C2201 6800p
C2216 0.047
VD2201
R2217 100K
C2217 27p
R2218 470
R2216 47
CF2201 10.7MJ
R2215 47
C2214 0.047
C2211 0.047
C2210 0.047
T2201
T2202
R2213 1K
CF2202 CFWM450H
R2210 2.2K
C2202 0.047
R2202 22
L2204 1mH
R2203 680
C2218 330p
E2207 0.47/35
X2201 10.260M
R2219 24K
C2220 1000p
C2219 0.01
L2206
C2215 0.022
E2206 10/16
C2213 47p
C2212 13p
Q2201
C2203 68p
IC2201
D2202
L2205 100µ
C2204 100p
C2205 0.022
DSP2001 DSP-201M
D2203
C2206 0.022
E2201 47/16
C2207 0.022
E2202 2.2/50
R2205 2.2K
R2206 100
C2208 0.01
R2208 22K
R2209 2.7K
C2209 0.01
T2203
R2207 22K
E2203 10/16
E2204 100/10
E2205 2.2/25
D2204
JK2001
Q2003
R2204 3.6K
V-CONT
R2113 22K
VR2101 100K
C2101 0.01
C2102 0.022
R2101 47K
R2102 240K
E2103 2.2/16
VR2102 100K
AM DC
C2125 0.1
R2115 36K
VR2104 SEP 10K
C2104 0.022
C2105 0.1
IC2101
C2106 0.1
E2101 1/50
C2107 0.1
E2102 0.47/50
R2103 10K
X2101 D912JF101
C2126 22p
C2108 0.1
C2109 0.01
C2110 0.047
C2111 0.047
R2104 1.5K
E2104 100/10
L2102 12µ
C2124 0.022
C2123 0.022
C2122 0.1
CF2101 10.7GK
R2112 10
VR2106 100K
MUTE
R2111 2.2K
C2121 180P
C2121 0.1
C2119 18P
L2101
R2110 10K
C2118 0.1
STOP
VR2105 10K
R2116 220
C2117 220P
R2109 51K
C2116 1000p
R2108 4.7K
C2115 0.01
C2113 470P
R2107 330K
E2103 0.1/50
R2106 330K
C2112 3300P
R2105 4.7K
CB2001
ANT
GND / ANT
L/D
CB2002
VT
NC
IF-OUT/ FM
IF-OUT/ AM
VCC/ AM
IF OUT/AM
CB2003
NC
AF-OUT/ AM
REQ AM
GND
S. METER
VCC/ FM
SD/ FM
REQ FM
IF-OUT FM
MPX IN
DET OUT
0V/ FM
0V/ FM
ST IND/ FM
DYNAS IN
ST/ MONO
L
R

Block Diagram


ANTENNA RECEPTACLE ET001
ANT
FM / MW / LW TUNER (FE001)
S-METER
AF-OUT/AM
L
R
VT
IF-OUT/AM
F-OUT/FM
F-OUT/AM
IF-OUT/FM
IC001 Q004, 007
L. RF CONTROL
IC003
L.P.F
PLL
IC004
IC002
MULTI PASS DETECTOR
IC501
DTS μ-COM
S. RAM CONTROL
IC502, Q501
S. RAM
IC503
LATCH
IC504
IC201
ELECTRICAL VOLUME
RR
RL
FR
FL
IC212
ISOLATOR AMP
L
R
IC1203
PRE AMP
L
R
IC1202
D / A CONVERTER
IC1106
DIGITAL FILTER
IC1109
INVERTER
IC1101
DIGITAL SIGNAL PROCESSER
IC1102
RF AMP SERVO CONTROL
IC1103
SERVO DRIVER
Q1103
LASER CONTROL
LD
PD
B
D
A
C
E
F
PICK-UP UNIT HD1201
TRACKING COIL
FOCUS COIL
SPINDLE MOTOR (M1302)
SLED MOTOR (M1303)
Q1501~1503
SOLENOID DRIVER
CLAMP SOLENOID (SD1301)
PT1301~1305
DISC DET. PHOTO SWITCH
LOADING MOTOR (M1301)
M
IC1507
LOADING MOTOR CONTROL
Q605, 606
LOADING CONTROL
CLAMP END SWITCH (S1301)
LIMIT SWITCH (S1302)
CD MECHANISM (DP24H01B)
IC602
RESET
S801 RESET
MAIN μ-COM
IC601
IC401
KEY MATRIX CONTROL
KEY MATRIX
S401~415
S418~421
S416, 417
S422, 423
IC402
LCD DRIVER
LCD401
LCD DISPLAY
Q809
MUTE DRIVER
Q303, 304
Q301, 302
MUTE
Q815, 816
OUT REMOTE SWITCHING
IC211
ISOLATOR AMP
L
R
CHG - L
CHG - R
GND
DIN JACK JK501
GND
ACC
BATT
Q601~603
BUS LINE CONTROL
B.DATA
IC209
PRE AMP
L
FRONT
R
MUTE
Q290, 291
RCA OUTPUT CONNECTOR ET201
IC210
PRE AMP
L
REAR
R
MUTE
Q292, 293
IC301
POWER AMP
IC302
POWER AMP
RR+
RL+
FR+
FL+
Q813, 814
POWER ANTENNA SWITCHING
P. ANT
O. REMOTE
IC801
FORCED STAND BY SWITCHING
+5V (μ-COM)
Q805~807
POWER ON CONTROL
BATT
Q401, 402, 405
LAMP DRIVER
PL401, 402
Q819, 822
LCD ON SWITCH
Q403, 404
LAMP DRIVER
PL407~410
PL403~406
Q820, 821
LAMP +B
RL -
RR -
I. PAUSE
IN - INT
ACC
GND
FL -
FR -
POWER SUPPLY & SP. OUTPUT CONNECTOR ET801

Parts Layout on P.C. Boards and Wiring Diagram (1/2)

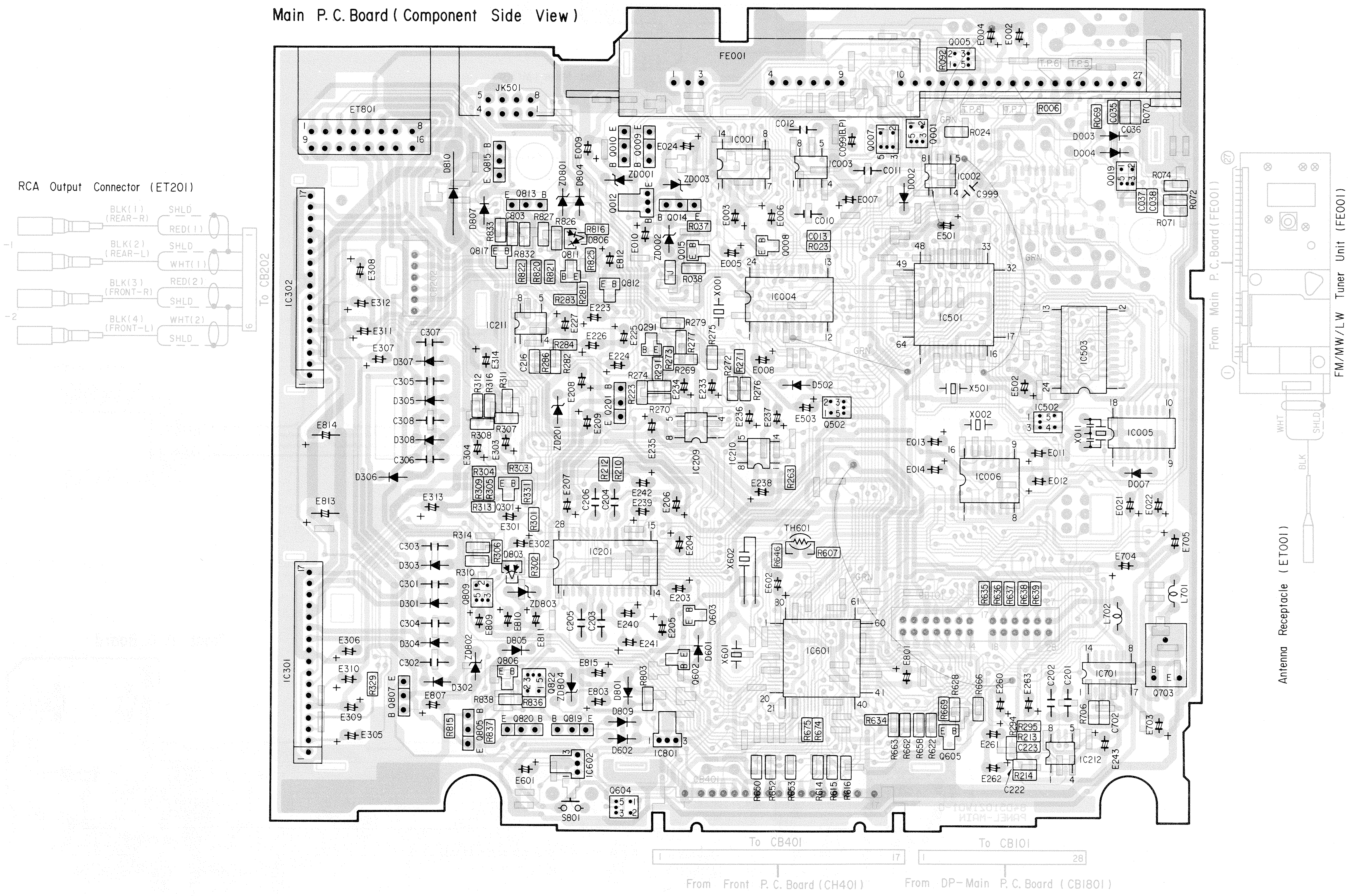
1

2

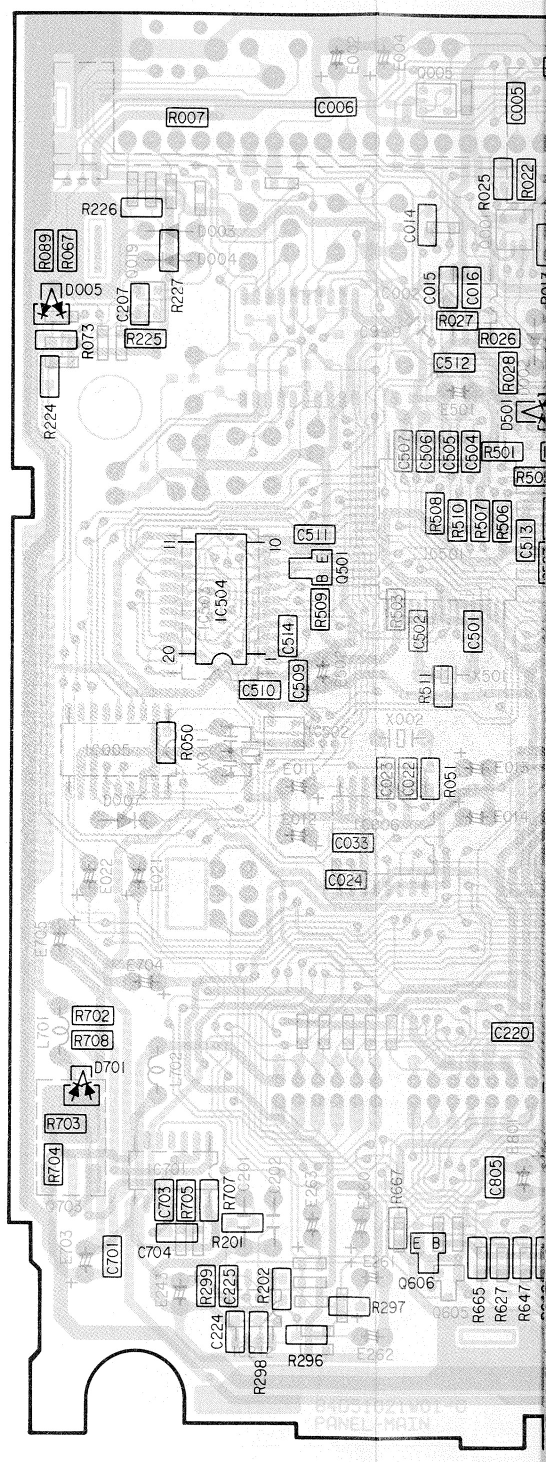
3

4

5



Main P. C. Board (Component Side View)
RCA Output Connector (ET201)
BLK(1) (REAR-R)
BLK(2) (REAR-L)
BLK(3) (FRONT-R)
BLK(4) (FRONT-L)
SHLD
RED(1)
WHT(1)
RED(2)
WHT(2)
To CB202
ET801
JK501
FE001
IC302
IC301
IC001
IC002
IC003
IC004
IC005
IC006
IC201
IC209
IC210
IC211
IC212
IC501
IC502
IC503
IC601
IC602
IC701
IC801
X001
X002
X501
X601
X602
TH601
S801
Q703
L701
L702
From Main P. C. Board (FE001)
FM/MW/LW Tuner Unit (FE001)
Antenna Receptacle (ET001)
WHT
SHLD
BLK
To CB401
From Front P. C. Board (CH401)
To CB101
From DP-Main P. C. Board (CB1801)
GRN



IC504
X501
X002
C220
R703
R704
D701
Q501
Q606

A

B

C

D

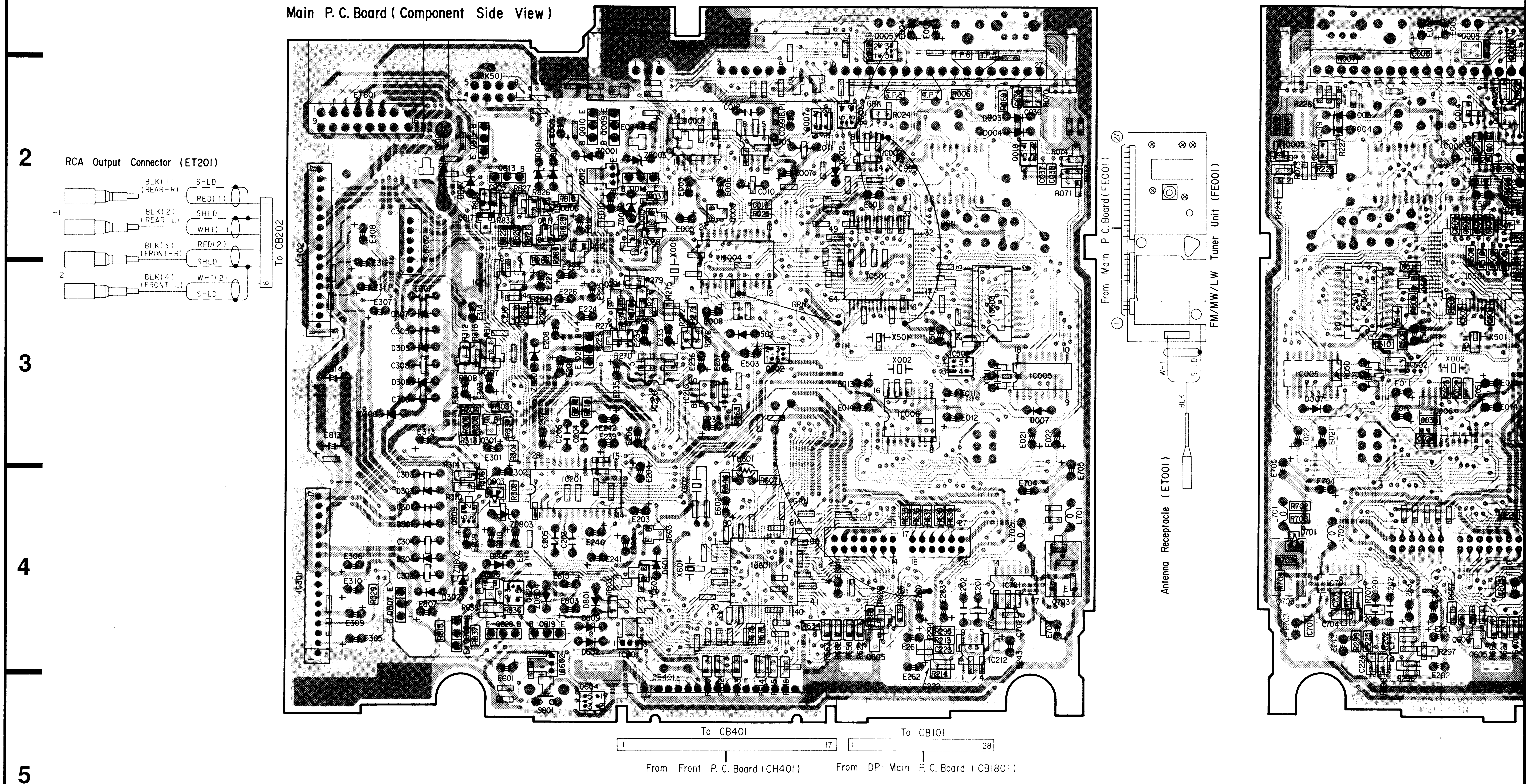
E

F

G

H

Parts Layout on P.C. Boards and Wiring Diagram (1/2)


1
2
3
4
5
Main P. C. Board (Component Side View)
RCA Output Connector (ET201)
-1
-2
BLK(1) (REAR-R)
SHLD
RED(1)
BLK(2) (REAR-L)
SHLD
WHT(1)
BLK(3) (FRONT-R)
RED(2)
SHLD
BLK(4) (FRONT-L)
WHT(2)
SHLD
To CB202
6
1
From Main P. C. Board (FE001)
FM/MW/LW Tuner Unit (FE001)
27
WHT
SHLD
BLK
Antenna Receptacle (ET001)
To CB401
1
17
From Front P. C. Board (CH401)
To CB101
1
28
From DP-Main P. C. Board (CB1801)
IC301
IC302
IC201
IC601
IC501
IC004
IC006
IC005
IC503
IC701
IC212
ET801
K501
X501
X002
X601
CB101
CB401
S801
TH601

A

B

C

D

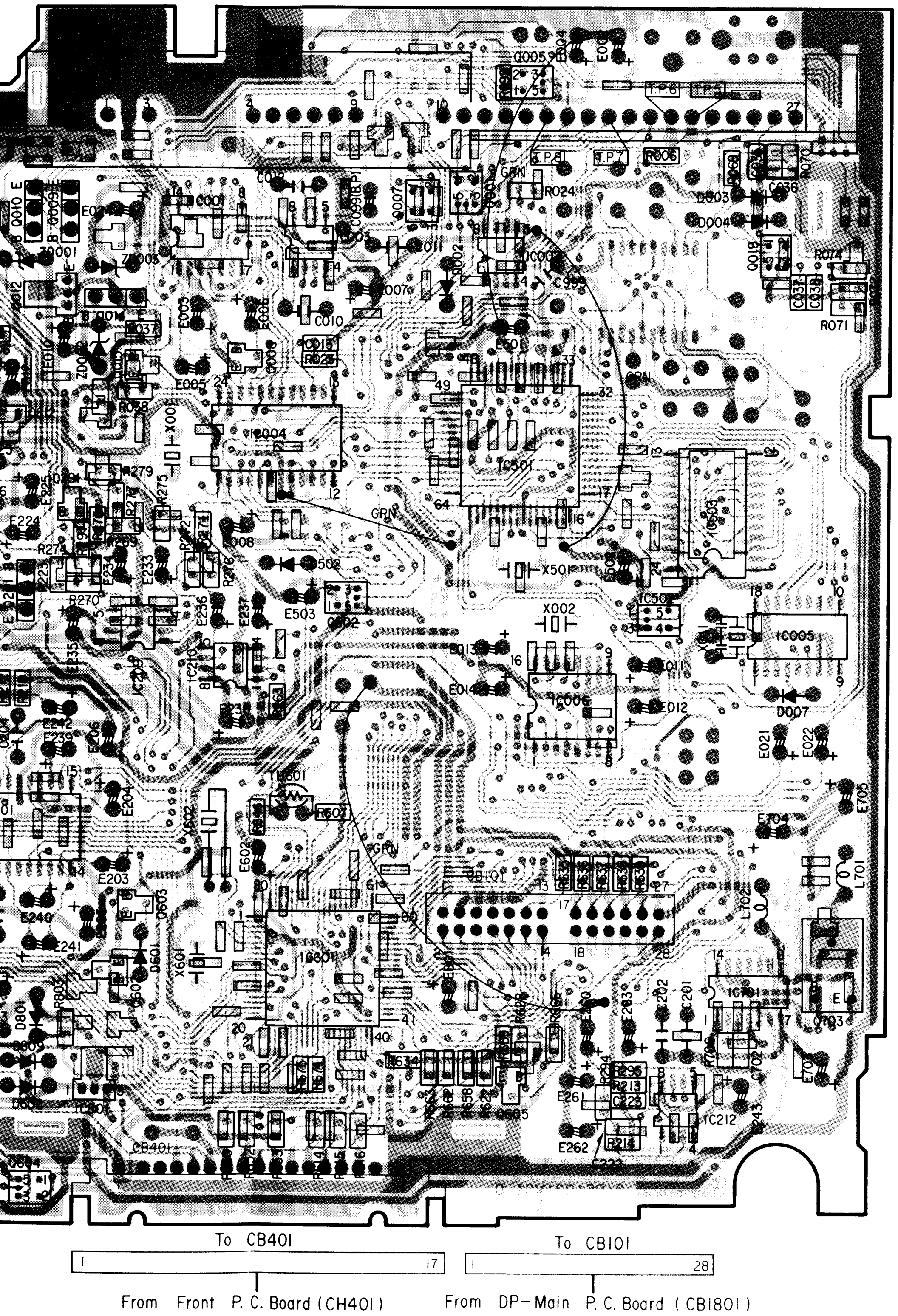
E

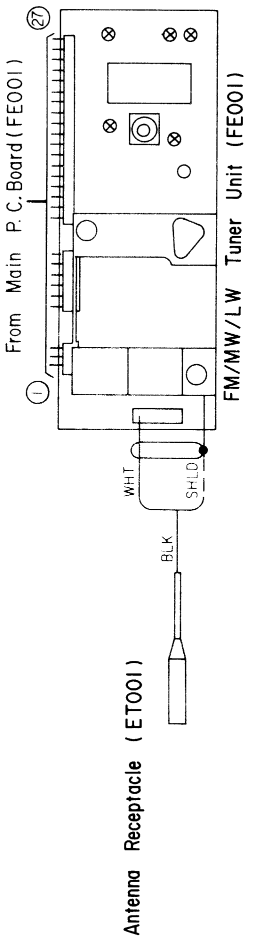
F

G

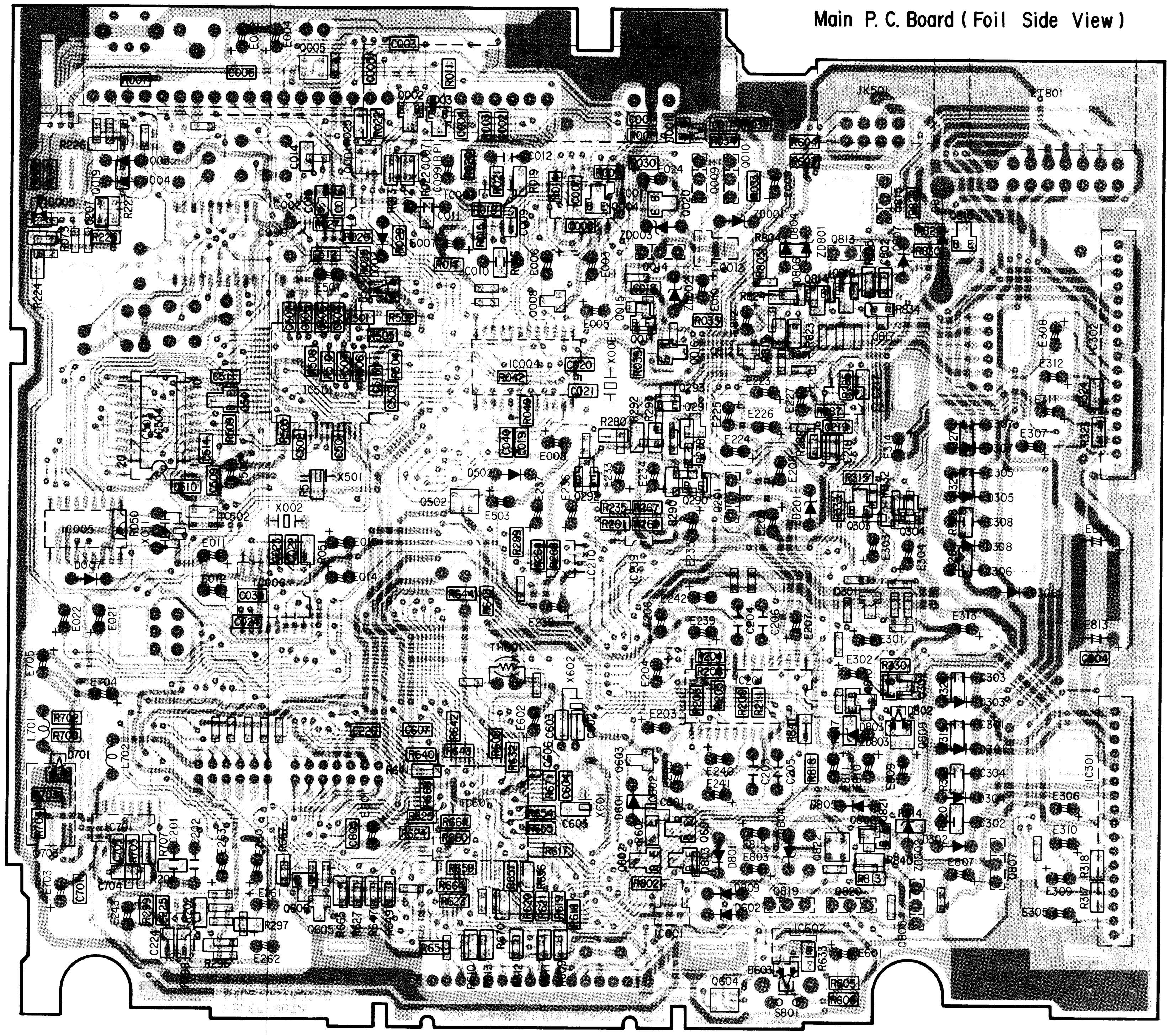
H

g Diagram (1/2)


To CB401
1
17
To CB101
1
28
From Front P. C. Board (CH401)
From DP-Main P. C. Board (CB1801)


27
1
From Main P. C. Board (FE001)
FM/MW/LW Tuner Unit (FE001)
WHT
SHLD
BLK
Antenna Receptacle (ET001)

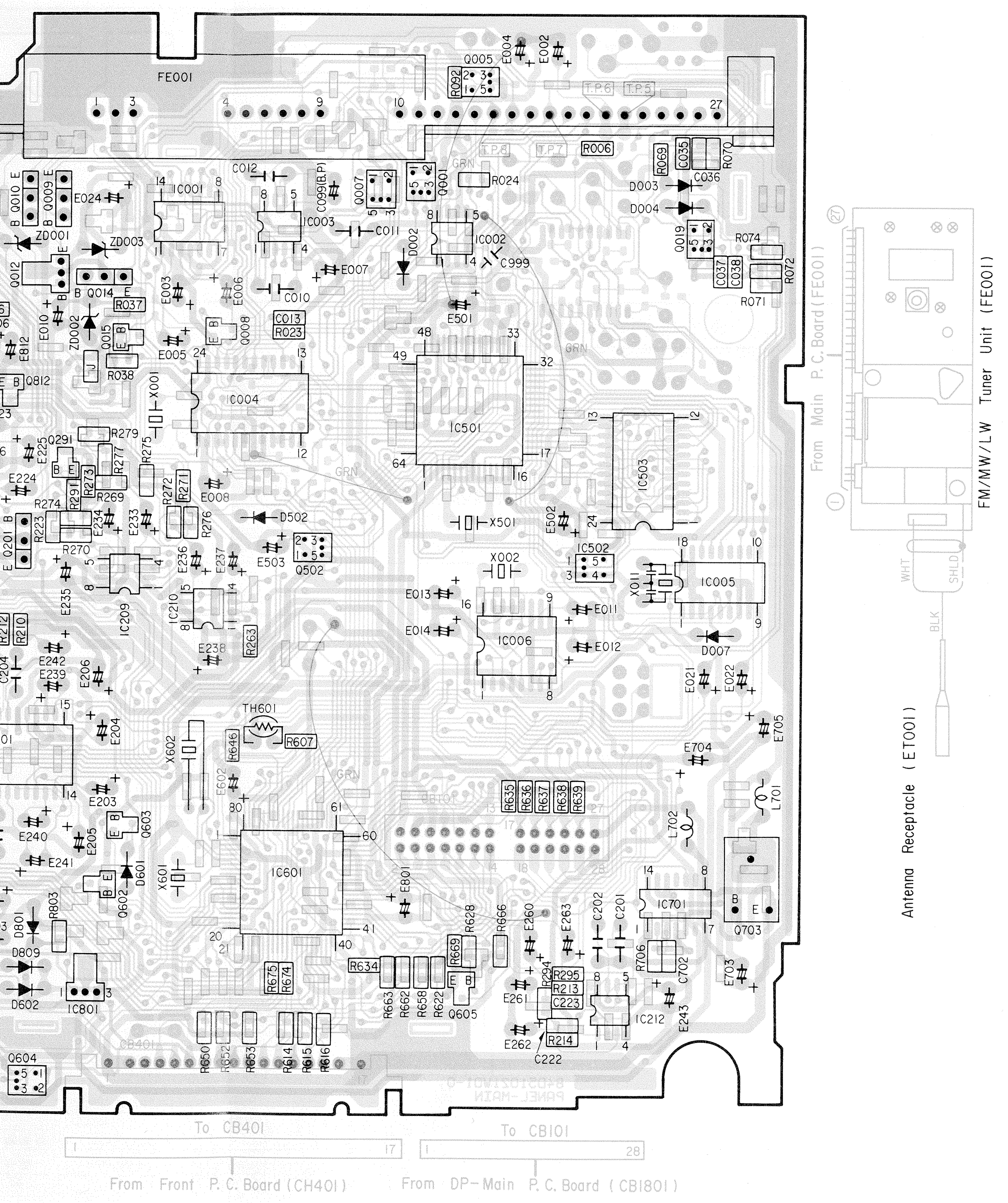
Main P. C. Board (Foil Side View)

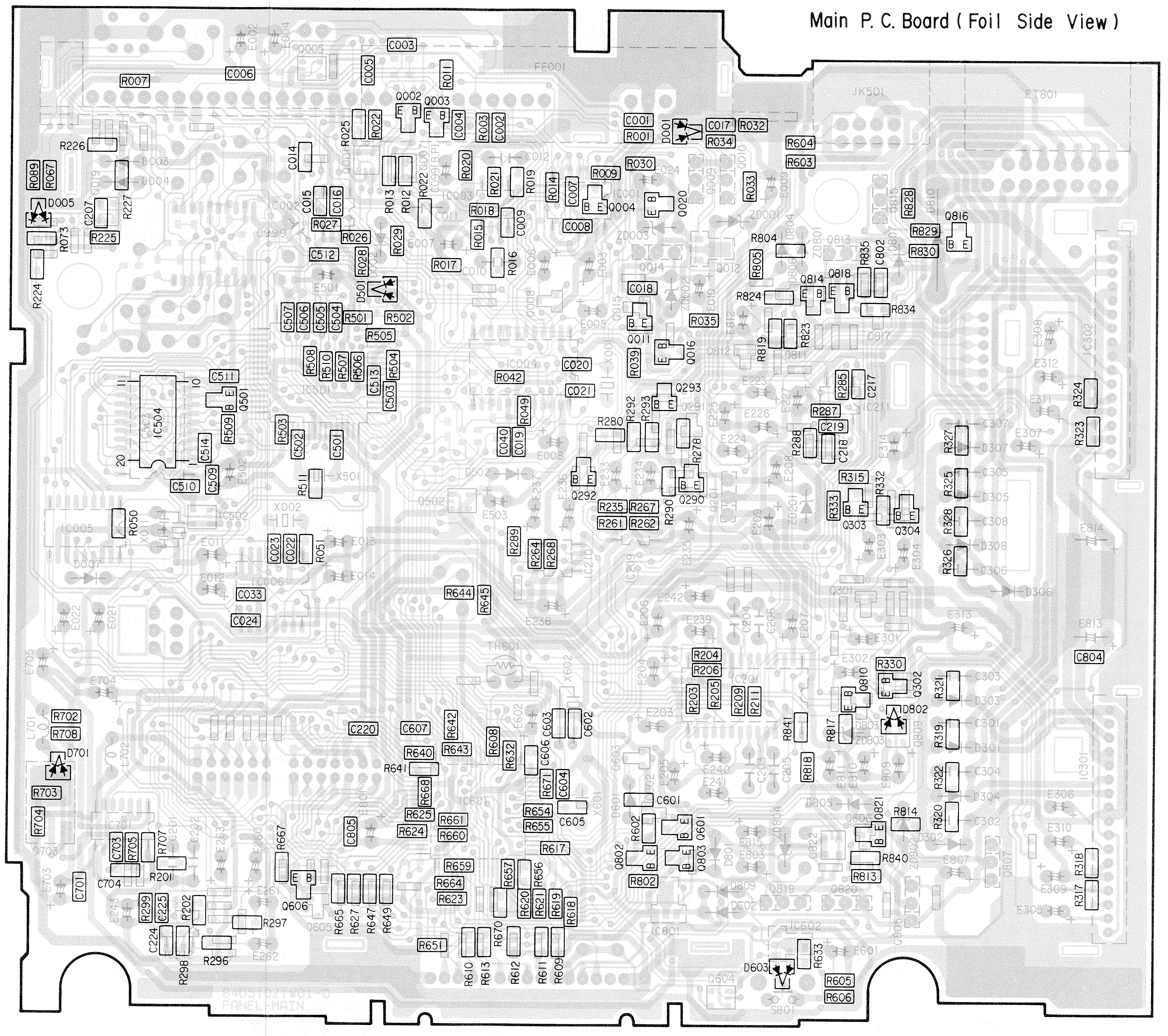


Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

D | E | F | G | H | I | J | K |

g Diagram (1/2)


FE001
IC001
IC002
IC003
IC004
IC501
IC503
IC005
IC006
IC601
IC701
IC801
IC212
Q703
From Main P.C. Board (FE001)
FM/MW/LW Tuner Unit (FE001)
Antenna Receptacle (ET001)
WHT
SHLD
BLK
To CB401
To CB101
From Front P.C. Board (CH401)
From DP-Main P.C. Board (CB1801)
PANEL-MAIN

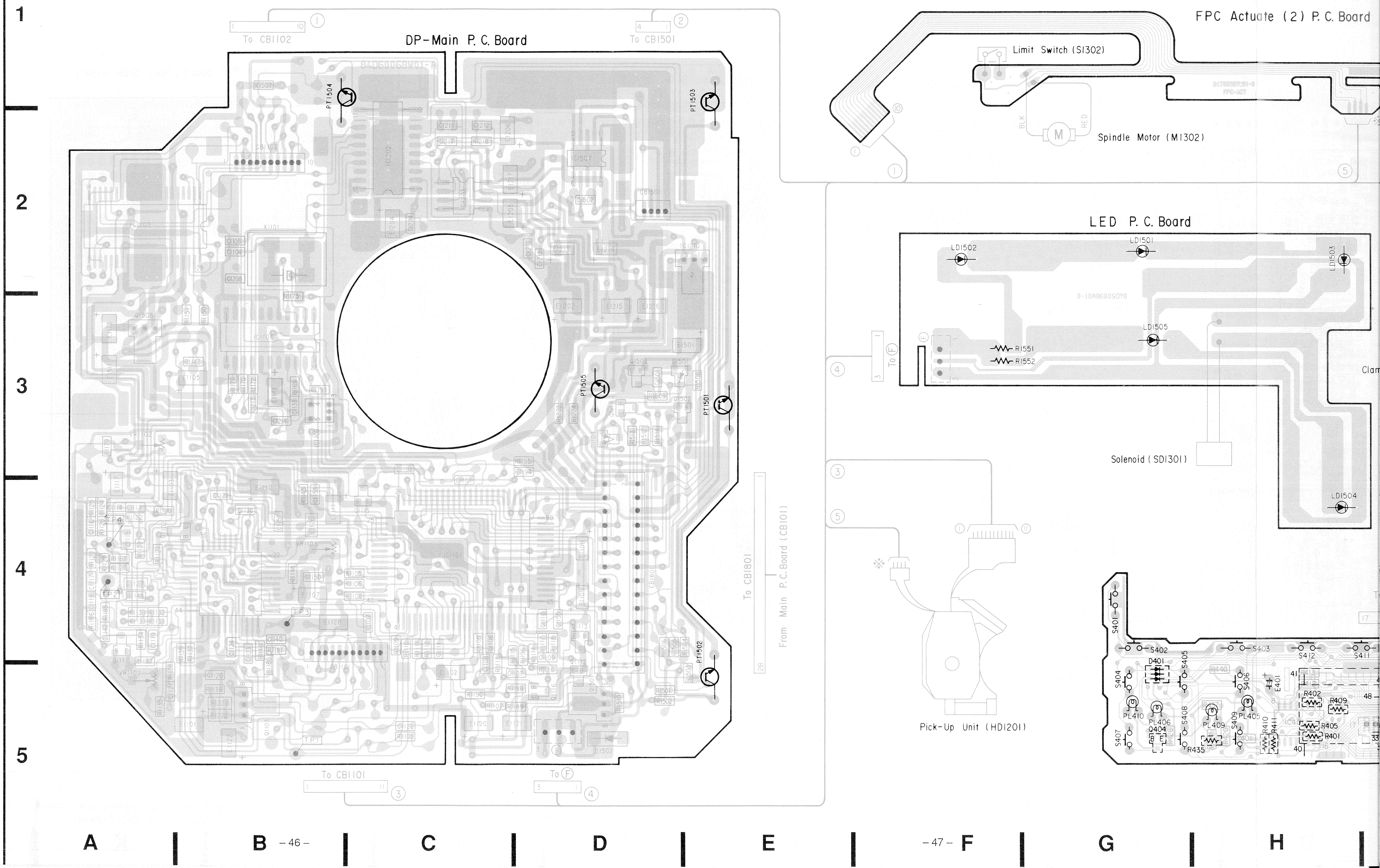

Main P. C. Board (Foil Side View)

JK501
FE001
IC504
IC302
IC301
IC602
PANEL MAIN

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.


1
2
3
4
5
A
B
C
D
E
F
G
H
DP-Main P. C. Board
To CB1102
To CB1501
To CB1101
To F
To CB1801
From Main P.C. Board (CB1101)
PT1504
PT1503
PT1505
PT1501
PT1502
IC1202
IC1507
IC1101
IC1102
IC1103
IC1106
IC1210
CB1102
CB1501
CB1801
X1101
TP1
TP2
TP3
TP4
VR1101
VR1102
VR1103
D1501
D1502
Q1501
Q1502
Q1503
Q1508
FPC Actuate (2) P. C. Board
Limit Switch (S1302)
Spindle Motor (M1302)
BLK
RED
M
LED P. C. Board
LD1501
LD1502
LD1503
LD1504
LD1505
R1551
R1552
Solenoid (SD1301)
Pick-Up Unit (HD1201)
Clam
S401
S402
S403
S404
S405
S406
S407
S408
S409
S411
S412
D401
E401
PL405
PL406
PL409
PL410
Q404
R401
R402
R405
R409
R410
R411
R435
R440

Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.

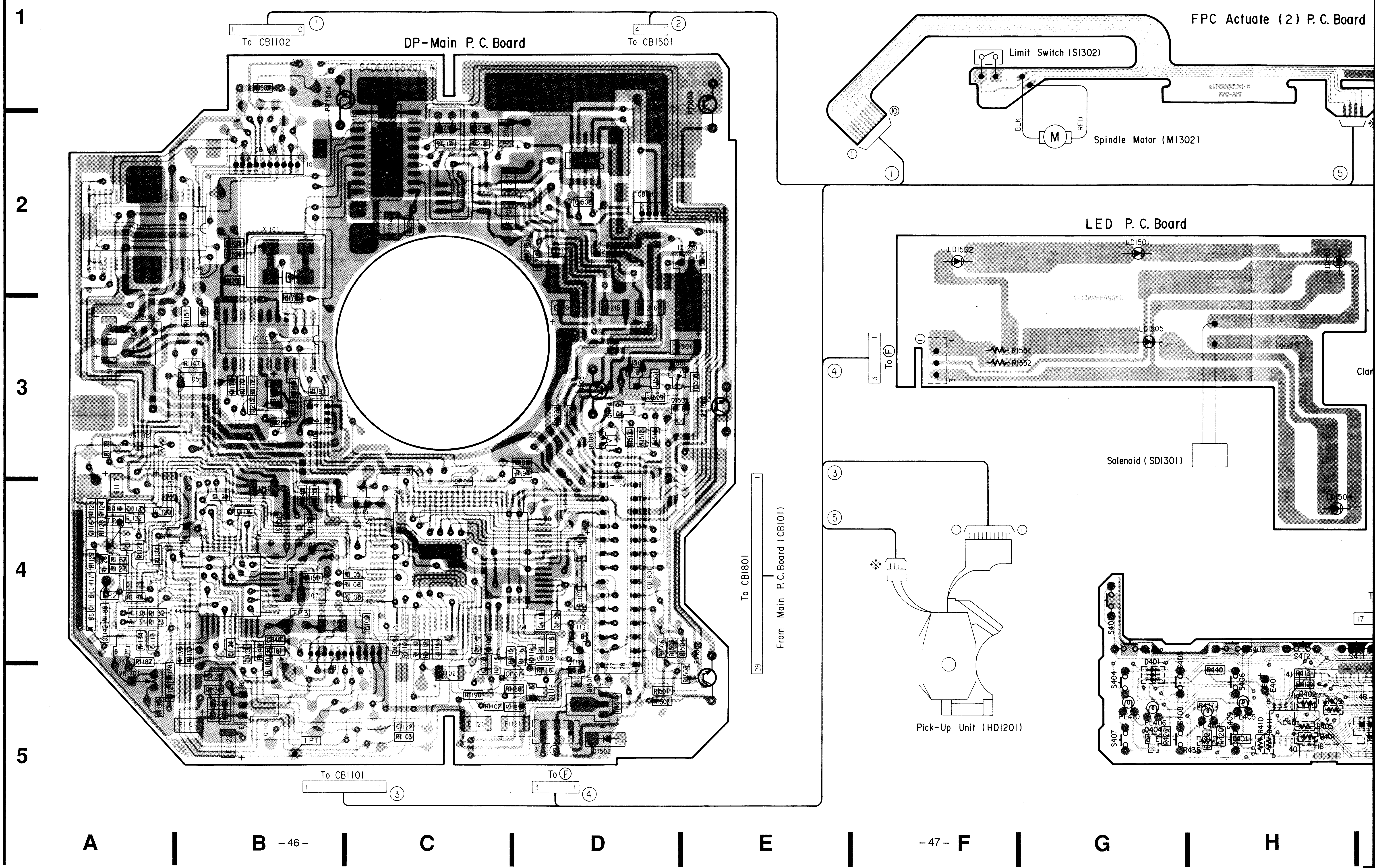
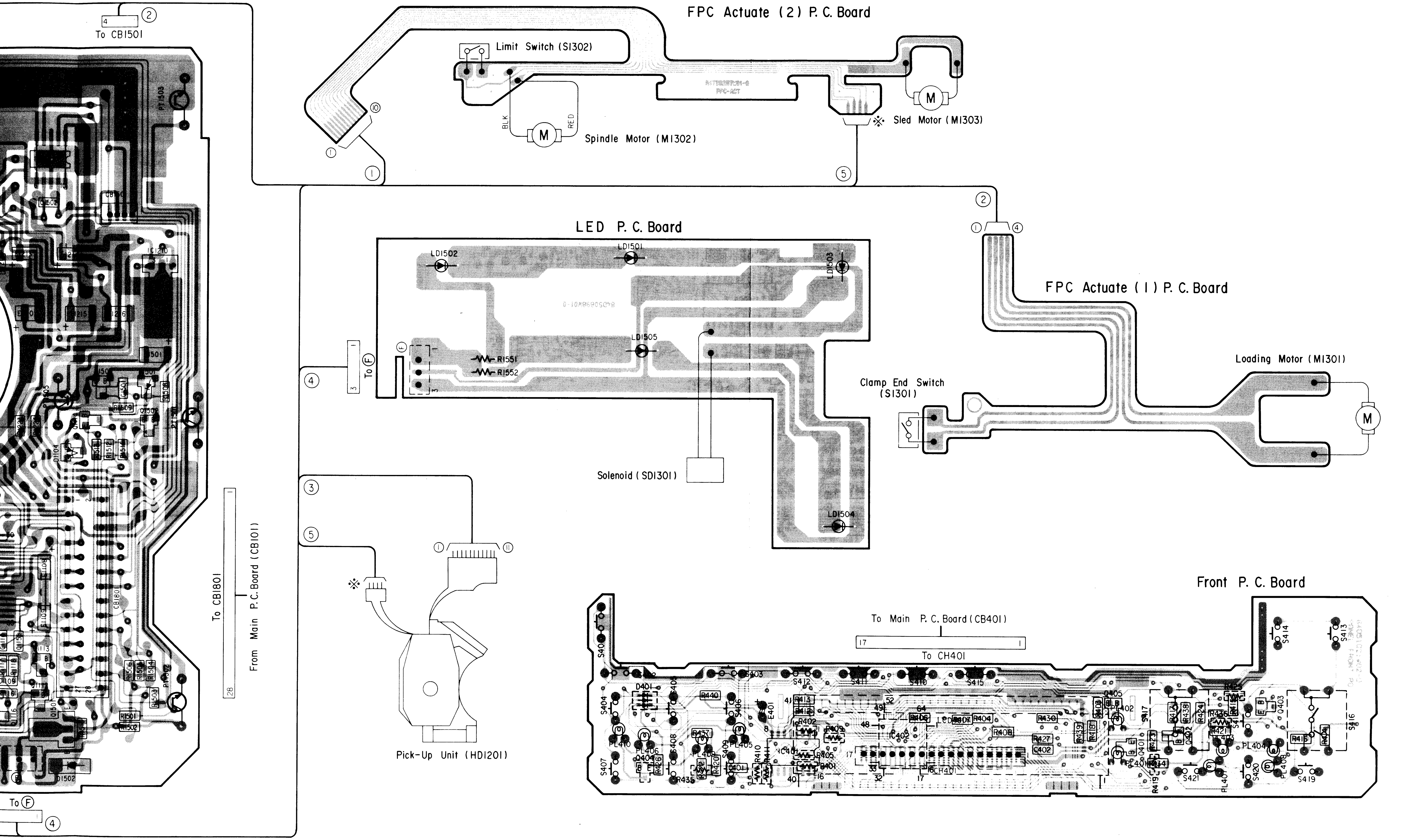

1
2
3
4
5
A
B
C
D
E
F
G
H
To CB1102
①
DP-Main P. C. Board
To CB1501
②
X1101
CB1102
IC1101
IC1210
VR1102
VR1101
TP1
TP2
TP3
PT1504
PT1503
PT1501
PT1502
To CB1801
From Main P.C. Board (CB1101)
To CB1101
③
To F
④
FPC Actuate (2) P. C. Board
Limit Switch (S1302)
BLK
RED
M
Spindle Motor (M1302)
⑩
⑤
LED P. C. Board
LD1502
LD1501
LD1503
LD1505
LD1504
R1551
R1552
To F
Solenoid (SD1301)
Clan
⑪
※
Pick-Up Unit (HD1201)
S404
S407
S408
S412
D401
IC401
E401
R440

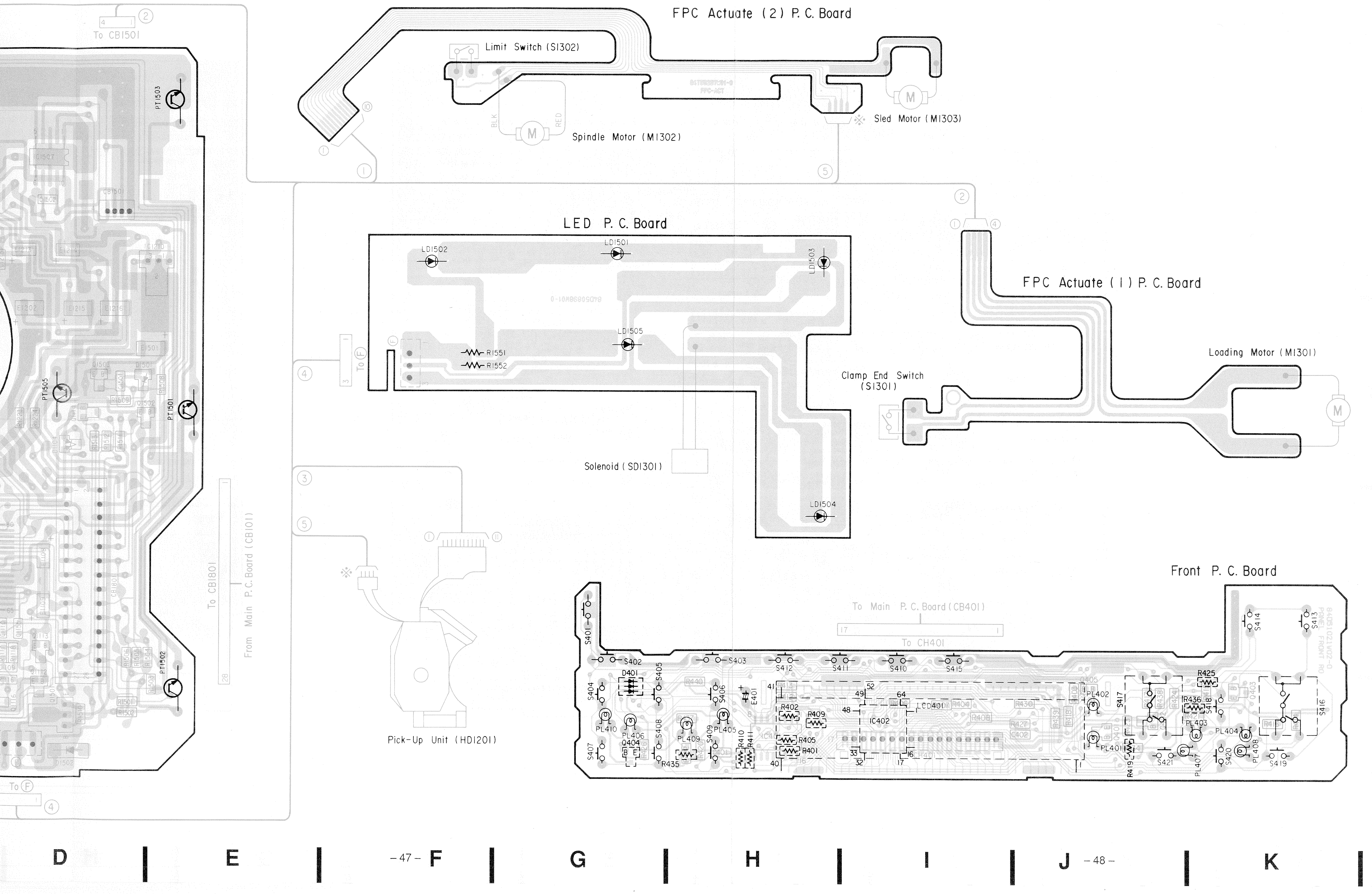
Diagram (2/2) All P.C. Boards viewed from soldered side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

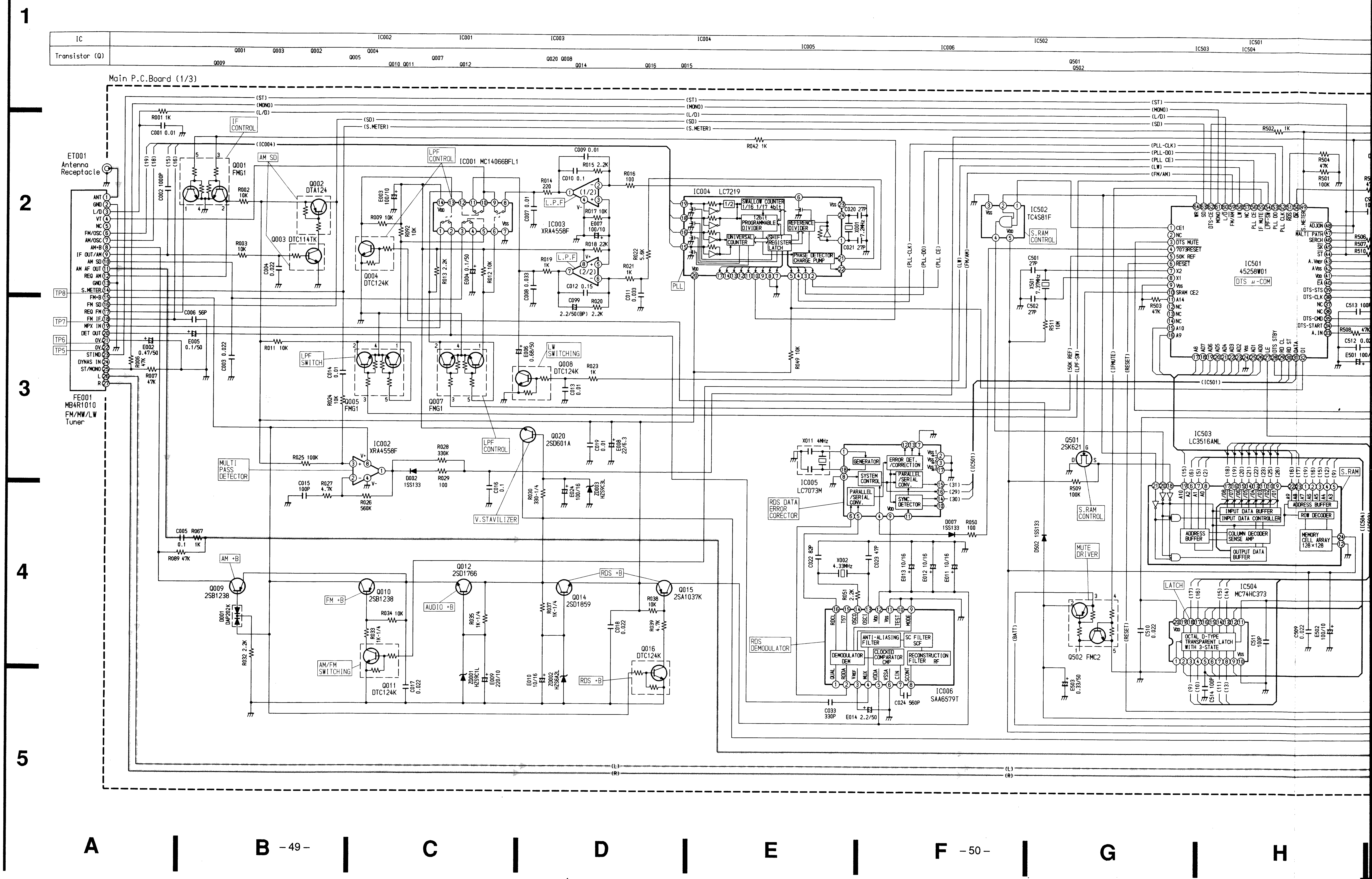

To CB1501
4
②
FPC Actuate (2) P. C. Board
Limit Switch (S1302)
Spindle Motor (M1302)
BLK
RED
M
Sled Motor (M1303)
※
⑩
①
⑤
②
LED P. C. Board
LD1502
LD1501
LD1503
LD1505
LD1504
R1551
R1552
F
To F
④
③
Solenoid (SD1301)
FPC Actuate (1) P. C. Board
Loading Motor (M1301)
Clamp End Switch (S1301)
④
Pick-Up Unit (HD1201)
⑪
To CB1801
From Main P.C.Board (CB101)
28
PT1503
PT1501
PT1502
IC1210
CB1801
Q1502
Q1501
D1502
D1104
R1509
R1501
R1502
R1504
R1505
R1506
R1512
R1513
To F
Front P. C. Board
To Main P. C. Board (CB401)
17
To CH401
S401
S402
S403
S404
S405
S406
S407
S408
S409
S410
S411
S412
S413
S414
S415
S416
S417
S418
S419
S420
S421
D401
E401
R440
R437
R436
R435
R402
R405
R409
R410
R411
R412
R413
R401
R406
R407
R408
R404
R430
R427
R431
R433
R439
R418
R419
R423
R424
R425
R415
R414
R416
R417
R420
R421
R426
R438
Q401
Q402
Q403
Q404
Q405
C402
IC401
IC402
LED401
CH401
PL401
PL402
PL403
PL404
PL405
PL406
PL407
PL408
PL409
PL410
41
49
52
64
48
40
16
32
17

iagram (2/2) All P.C. Boards viewed from soldered side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

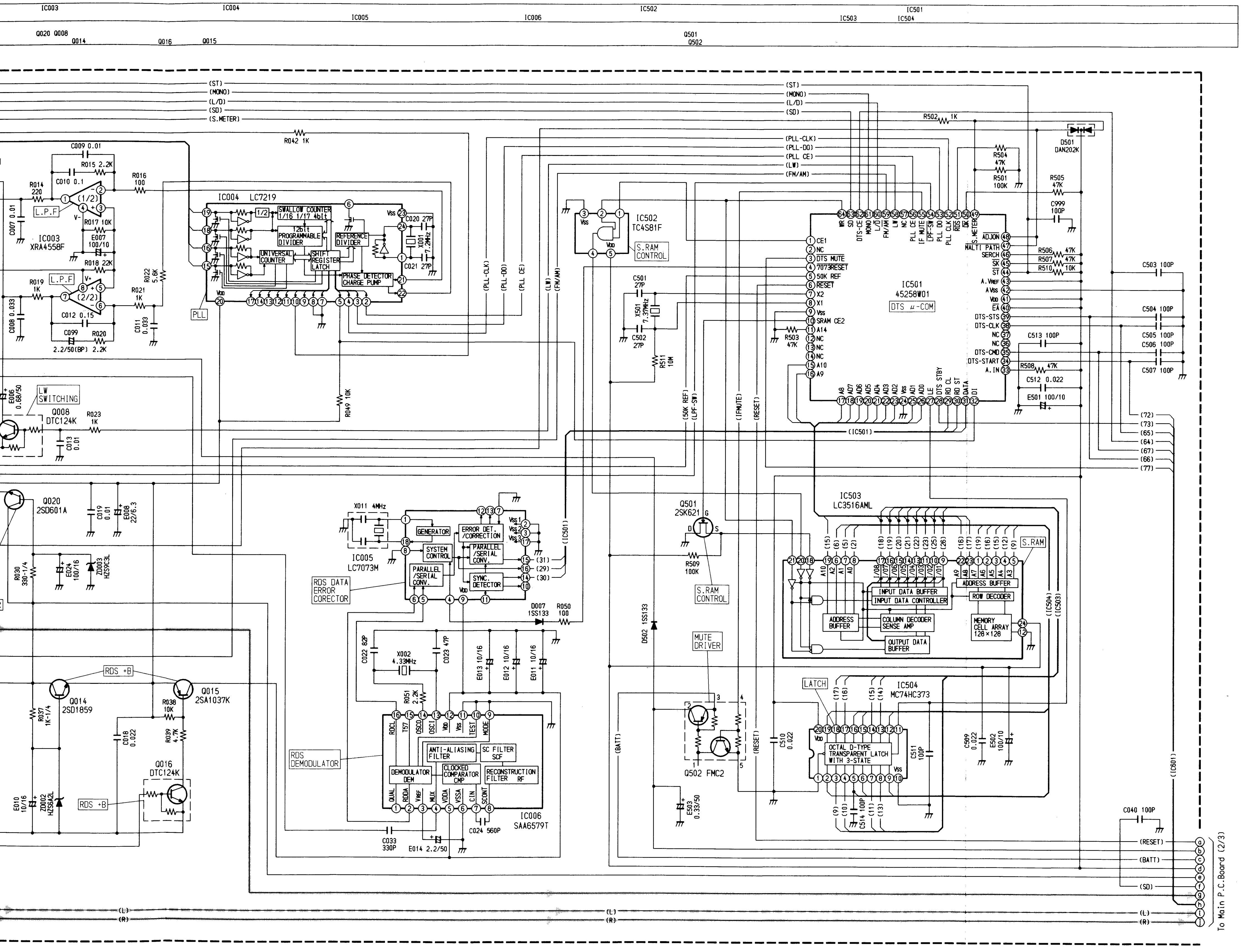

To CB1501
PT1503
IC1501
CB1501
IC1210
E1202
E1215
E1216
E1501
PT1505
PT1501
PT1502
CB1801
To CB1801
From Main P.C. Board (CB1101)
To F
D1502
FPC Actuate (2) P. C. Board
Limit Switch (S1302)
Spindle Motor (M1302)
BLK
RED
M
Sled Motor (M1303)
LED P. C. Board
LD1502
LD1501
LD1503
LD1505
LD1504
R1551
R1552
To F
Solenoid (SD1301)
FPC Actuate (1) P. C. Board
Clamp End Switch (S1301)
Loading Motor (M1301)
Pick-Up Unit (HD1201)
Front P. C. Board
To Main P. C. Board (CB401)
To CH401
S401
S402
S403
S412
S411
S410
S415
S414
S413
D401
S404
S405
S406
S407
S408
S409
PL410
PL406
Q404
PL409
PL405
R435
R402
R409
R405
R401
R410
R411
E401
IC402
LCD401
PL402
PL401
S417
R419
R425
R436
S418
PL403
PL404
PL407
PL408
S420
S421
S419
S416
D
E
F
G
H
I
J
K

Schematic Diagram (1/4)


1
2
3
4
5
IC
Transistor (Q)
IC002 IC001 IC003 IC004 IC005 IC006 IC502 IC503 IC504 IC501
Q001 Q003 Q002 Q004 Q005 Q009 Q010 Q011 Q007 Q012 Q020 Q008 Q014 Q016 Q015 Q501 Q502
Main P.C.Board (1/3)
ET001 Antenna Receptacle
FE001 MB4R1010 FM/MW/LW Tuner
ANT GND L/D VT NC FM/OSC AM/OSC AM+B IF OUT/AM AM SD AM AF OUT REQ AM GND S.METER FM+B FM SD REQ FM FM IF MPX IN DET OUT 0V 0V STIND DYNAS IN ST/MONO L R
TP8 TP7 TP6 TP5
(ST) (MONO) (L/D) (SD) (S.METER) (IC004)
IF CONTROL
Q001 FMG1
AM SD
Q002 DTA124
Q003 DTC114TK
LPF CONTROL
IC001 MC14066BFL1
Q004 DTC124K
IC003 XRA4558F
L.P.F
IC004 LC7219
SWALLOW COUNTER 1/16 1/17 4bit
12bit PROGRAMMABLE DIVIDER
REFERENCE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
PHASE DETECTOR CHARGE PUMP
PLL
LPF SWITCH
Q005 FMG1
Q007 FMG1
LW SWITCHING
Q008 DTC124K
MULTI PASS DETECTOR
IC002 XRA4558F
LPF CONTROL
Q020 2SD601A
V.STAVILIZER
AM +B
Q009 2SB1238
D001 DAP202K
FM +B
Q010 2SB1238
Q012 2SD1766
AUDIO +B
AM/FM SWITCHING
Q011 DTC124K
ZD001 HZS9C1L
Q014 2SD1859
ZD002 HZS6A2L
RDS +B
Q015 2SA1037K
Q016 DTC124K
X011 4MHz
IC005 LC7073M
GENERATOR
ERROR DET. /CORRECTION
SYSTEM CONTROL
PARALLEL /SERIAL CONV.
SYNC. DETECTOR
RDS DATA ERROR CORECTOR
X002 4.33MHz
RDS DEMODULATOR
ANTI-ALIASING FILTER
SC FILTER SCF
DEMODULATOR DEM
CLOCKED COMPARATOR CMP
RECONSTRUCTION FILTER RF
IC006 SAA6579T
(PLL-CLK) (PLL-DO) (PLL CE) (LW) (FM/AM)
IC502 TC4S81F
S.RAM CONTROL
X501 7.37MHz
IC501 45258W01 DTS μ-COM
CE1 NC DTS MUTE 7073RESET 50K REF RESET X2 X1 Vss SRAM CE2 A14 NC NC NC A10 A9
ADJON MALTI PATH SERCH SK SO ST A.Vref AVss VDD EA DTS-STS DTS-CLK NC NC DTS-CMD DTS-START A.IN
(50K REF) (LPF-SW) (FMUTE) (RESET) (IC501)
Q501 2SK621
S.RAM CONTROL
IC503 LC3516ANL
S.RAM
INPUT DATA BUFFER
INPUT DATA CONTROLLER
ROW DECODER
ADDRESS BUFFER
COLUMN DECODER SENSE AMP
MEMORY CELL ARRAY 128×128
OUTPUT DATA BUFFER
MUTE DRIVER
Q502 FMC2
LATCH
IC504 MC74HC373
OCTAL D-TYPE TRANSPARENT LATCH WITH 3-STATE
(BATT) (RESET)
(L) (R)
A
B
C
D
E
F
G
H

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$


IC003
IC004
IC005
IC006
IC502
IC503
IC501
IC504
Q020 Q008
Q014
Q016
Q015
Q501
Q502
IC004 LC7219
SWALLOW COUNTER 1/16 1/17 4bit
12bit PROGRAMMABLE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
PLL
IC003 XRA4558F
L.P.F
LW SWITCHING
Q008 DTC124K
Q020 2SD601A
Q014 2SD1859
Q015 2SA1037K
Q016 DTC124K
RDS +B
IC005 LC7073M
GENERATOR
SYSTEM CONTROL
ERROR DET. /CORRECTION
PARALLEL /SERIAL CONV.
SYNC. DETECTOR
RDS DATA ERROR CORECTOR
RDS DEMODULATOR
DEMODULATOR DEM
ANTI-ALIASING FILTER
SC FILTER SCF
CLOCKED COMPARATOR CMP
RECONSTRUCTION FILTER RF
IC006 SAA6579T
IC502 TC4S81F
S.RAM CONTROL
IC501 45258W01
DTS μ-COM
Q501 2SK621
MUTE DRIVER
Q502 FMC2
IC503 LC3516AML
INPUT DATA BUFFER
INPUT DATA CONTROLLER
ROW DECODER
ADDRESS BUFFER
COLUMN DECODER SENSE AMP
OUTPUT DATA BUFFER
MEMORY CELL ARRAY 128×128
S.RAM
LATCH
IC504 MC74HC373
OCTAL D-TYPE TRANSPARENT LATCH WITH 3-STATE
D501 DAN202K
(RESET)
(BATT)
(SD)
(L)
(R)
To Main P.C.Board (2/3)

IC001

1	SIG	8	5.15V
2	SIG	9	5.15V
3	0V	10	5.15V
4	0V	11	3.9V
5	9.31V	12	0.03V
6	9.31V	13	10.63V
7	0V	14	10.65V

IC002

1	PS
2	0V
3	0V
4	0V
5	NC
6	NC
7	NC
8	8.75V

IC003

1	9.27V
2	0.75V
3	3.04V
4	0V
5	3.04V
6	5.08V
7	5.08V
8	9.77V

IC004

1	SIG	13	NC
2	0V	14	NC
3	0V	15	0V
4	0V	16	0V
5	4.55V	17	NC
6	NC	18	0V
7	0V	19	SIG
8	0V	20	5V
9	1.8V	21	3.1V
10	4.91V	22	0V
11	NC	23	0V
12	NC	24	SIG

IC005

1	PS	10	NC
2	0V	11	NC
3	0V	12	NC
4	4.83V	13	NC
5	PS	14	4.93V
6	PS	15	4.93V
7	0V	16	4.93V
8	0V	17	0V
9	0V	18	PS

IC006

1	NC	9	0V
2	PS	10	0V
3	2.47V	11	0V
4	2.45V	12	4.93V
5	4.93V	13	PS
6	0V	14	PS
7	2.44V	15	NC
8	0V	16	PS

IC502

1	0V
2	4.97V
3	4.97V
4	4.97V
5	4.97V

IC503

1	PS	13	PS
2	PS	14	PS
3	PS	15	PS
4	PS	16	PS
5	PS	17	PS
6	PS	18	0V
7	PS	19	4.97V
8	0V	20	4.97V
9	0V	21	4.97V
10	PS	22	PS
11	PS	23	PS
12	0V	24	4.97V

IC504

1	0V	11	PS
2	0V	12	PS
3	0V	13	PS
4	PS	14	PS
5	PS	15	PS
6	PS	16	PS
7	PS	17	PS
8	PS	18	PS
9	PS	19	PS
10	0V	20	4.98V

IC501

1	4.96V	17	4.88V	33	4.93V	49	4.05V
2	0V	18	0V	34	0.22V	50	4.95V
3	4.96V	19	PS	35	0V	51	0V
4	4.96V	20	0V	36	NC	52	0V
5	0V	21	0V	37	NC	53	0V
6	4.93V	22	0V	38	4.48V	54	4.95V
7	2.13V	23	0V	39	PS	55	0V
8	2.36V	24	0V	40	4.95V	56	0V
9	0V	25	0V	41	4.95V	57	NC
10	4.91V	26	0V	42	0V	58	0V
11	4.91V	27	0V	43	4.95V	59	4.96V
12	NC	28	0V	44	4.95V	60	0V
13	NC	29	4.93V	45	4.95V	61	0V
14	NC	30	4.93V	46	4.95V	62	4.97V
15	4.91V	31	4.93V	47	4.8V	63	4.94V
16	0.06V	32	4.97V	48	4.8V	64	4.97V

	E	C	B
Q002	0V	4.99V	0.2V
Q003	5.01V	4.95V	4.99V
Q004	0V	9.69V	0.2V
Q008	0V	0V	0V
Q009	8.8V	1.15V	8.2V
Q010	8.8V	8.8V	8.2V
Q011	0V	0.1V	2.7V
Q012	8.8V	14.25V	9.4V
Q014	4.9V	14.25V	5.5V
Q015	4.97V	0V	4.28V
Q016	0V	0V	8.74V
Q020	10.45V	13.62V	10.73V

	G	S	D
Q501	4.98V	0V	0V

	1	2	3	4	5
Q001	4.5V	0V	4.5V	0V	0V
Q005	0V	0V	3.6V	3.6V	0V
Q007	0V	0V	8.86V	0V	8.88V
Q502	13.9V	0V	0V	13.83V	0.09V

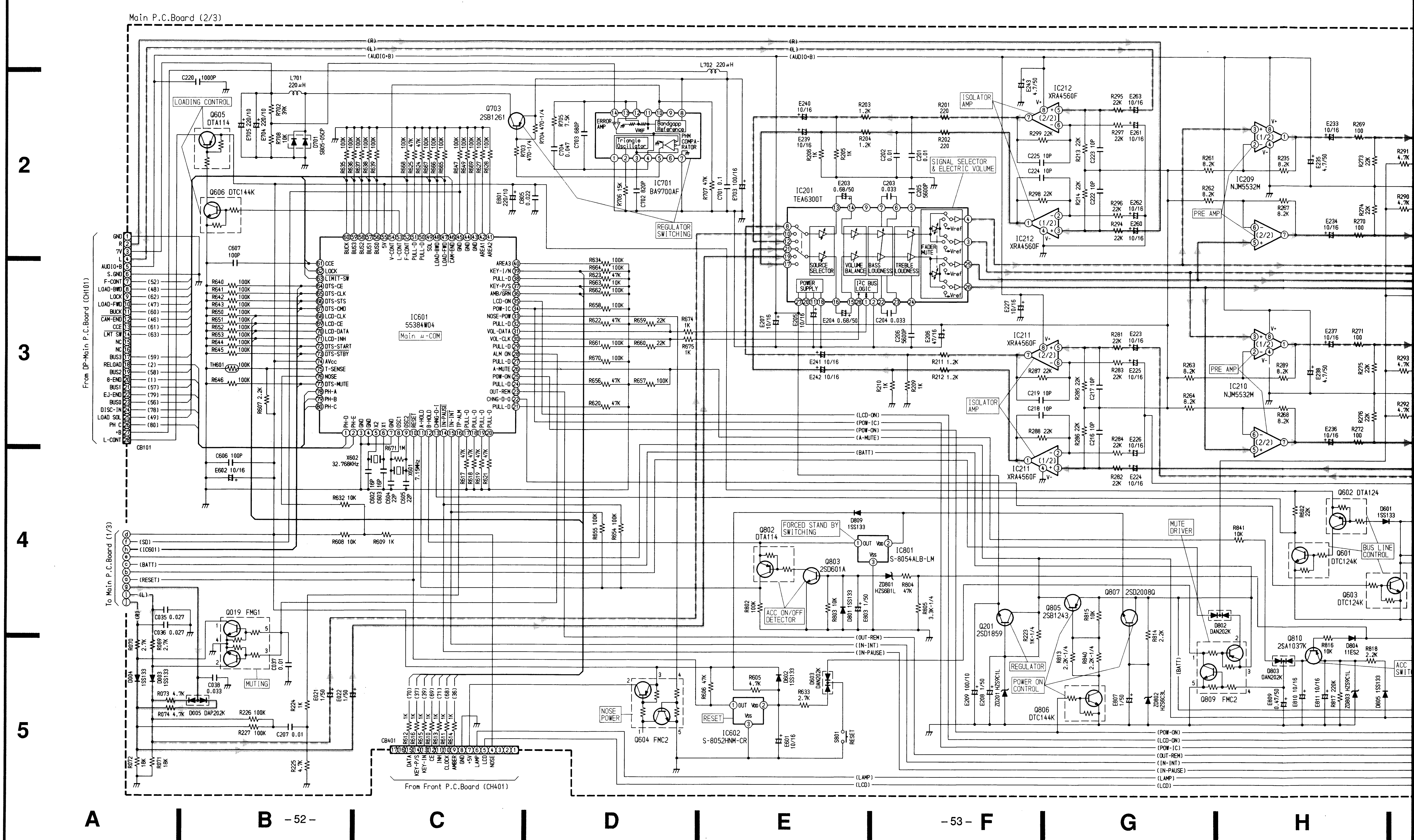
<Measuring Conditions>

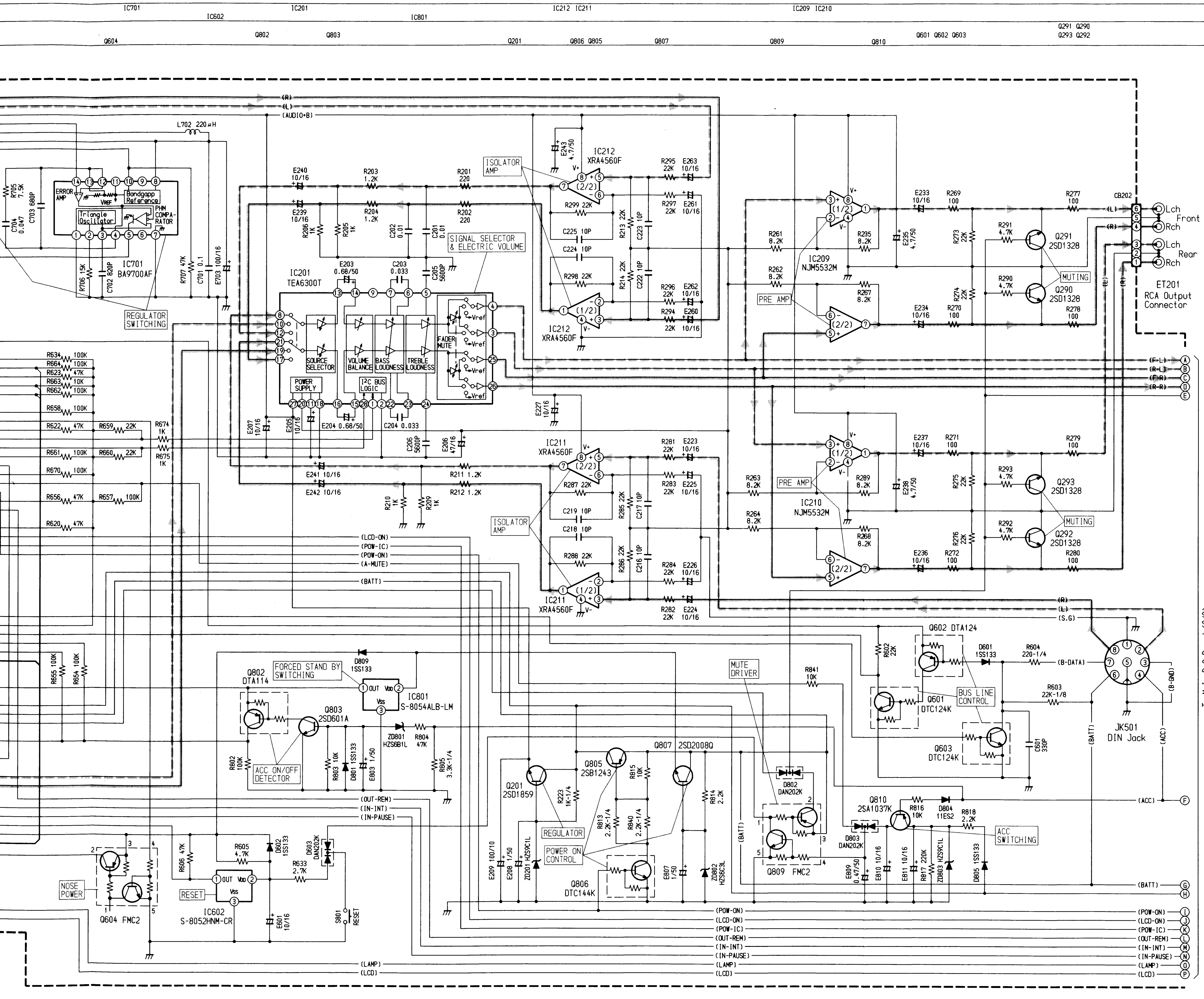
1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : CD : Be Playing back the 2nd Music of the test CD (YEDS-18)

TUNER : No Signal Input
FM 98.1MHz
MW 999kHz
LW 216kHz

Schematic Diagram (2/4)

IC	IC601 IC701 IC602 IC201 IC801 IC212 IC211 IC209 IC210
Transistor (Q)	Q605 Q606 Q019 Q703 Q604 Q802 Q803 Q201 Q806 Q805 Q807 Q809 Q810 Q601 Q602 Q603


Main P.C.Board (2/3)
1
2
3
4
5
A
B
C
D
E
F
G
H
(R)
(L)
(AUDIO+B)
C220 1000P
LOADING CONTROL
Q605 DTA114
Q606 DTC144K
L701 220μH
L702 220μH
E705 220/10
E704 220/10
R702 39K
R708 10K
D701 S805-05CP
Q703 2SB1261
R704 470-1/4
R703 470-1/4
R705 7.5K
C704 0.047
C703 680P
ERROR AMP
Bandgapp Reference
Triangle Oscillator
PWM COMPA-RATOR
VREF
IC701 BA9700AF
R706 15K
C702 820P
R707 47K
C701 0.1
E703 100/16
REGULATOR SWITCHING
E801 220/10
C805 0.022
From DP-Main P.C.Board (CH101)
GND
R
7V
AUDIO+B
S.GND
F-CONT
LOAD-BWD
LOCK
LOAD-FWD
BUCK
CAM-END
CCE
LMT SW
NC
BUS3
RELOAD
BUS2
B-END
BUS1
EJ-END
BUS0
DISC-IN
LOAD SOL
PH C
+B
L-CONT
CB101
C607 100P
R640 100K
R641 100K
R642 100K
R643 100K
R650 100K
R651 100K
R652 100K
R653 100K
R644 100K
R645 100K
TH601 100K
R646 100K
R607 2.2K
C606 100P
E602 10/16
R635 R636 R637 R638 R639 100K
R668 R625 R624 R667 R666 R665 100K 47K
R647 R649 R669 R627 R628 100K
IC601 55384W04
Main μ-COM
CCE
LOCK
LIMIT-SW
DTS-CE
DTS-CLK
DTS-STS
DTS-CMD
LCD-CLK
LCD-CE
LCD-DATA
LCD-INH
DTS-START
DTS-STBY
AVcc
T-SENSE
DTS-MUTE
PH-A
PH-B
PH-C
AREA3
KEY-I/N
PULL-D
KEY-P/S
AMB/GRN
LCD-ON
POW-IC
NOSE-POW
PULL-D
VOL-DATA
VOL-CLK
PULL-D
ALM ON
PULL-D
A-MUTE
POW-ON
PULL-D
OUT-REM
CHNG-D-O
CHNG-D-I
PULL-D
BUCK BUS3 BUS2 BUS1 BUS0 5V V-CONT L-CONT F-CONT PULL-D PULL-D SOL LOAD-BWD LOAD-FWD CAM-END GND GND AREA1 AREA2
PH-D PH-E GND X2 X1 GND OSC1 OSC2 RESET A-HOLD B-HOLD IN-INT IN-PAUSE TP-ALM PULL-D PULL-D PULL-D PULL-D
R634 100K
R664 100K
R623 47K
R663 10K
R662 100K
R658 100K
R622 47K
R659 22K
R674 1K
R661 100K
R660 22K
R675 1K
R670 100K
R656 47K
R657 100K
R620 47K
X602 32.768KHz
R671 1M
X601 7.15MHz
C602 16P
C603 16P
C604 22P
C605 22P
R617 R618 R619 R621 47K
R632 10K
R608 10K
R609 1K
R655 100K
R654 100K
To Main P.C.Board (1/3)
(SD)
(IC601)
(BATT)
(RESET)
(L)
(R)
C035 0.027
C036 0.027
Q019 FMG1
MUTING
R070 2.7K
R069 2.7K
D004 1SS133
D003 1SS133
C037 0.01
R073 4.7K
C038 0.033
R074 4.7K
D005 DAP202K
R226 100K
R227 100K
C207 0.01
R224 1K
E021 1/50
E022 1/50
R072 18K
R071 18K
R225 4.7K
CB401
R612 R616 R615 R614 R610 R613 R611 R614 1K
DATA KEY-P/S KEY-IN CE INH CLOCK AMBER GND 5V LAMP LCD NOSE
From Front P.C.Board (CH401)
Q604 FMC2
NOSE POWER
R606 47K
R605 4.7K
D602 1SS133
R633 2.7K
D603 DAN202K
IC602 S-8052HNM-CR
RESET
E601 10/16
S801 RESET
Q802 DTA114
FORCED STAND BY SWITCHING
D809 1SS133
IC801 S-8054ALB-LM
OUT Vdd Vss
Q803 2SD601A
ACC ON/OFF DETECTOR
ZD801 HZS6B1L
R804 47K
R805 3.3K-1/4
R802 100K
R803 10K
D801 1SS133
E803 1/50
(LCD-ON)
(POW-IC)
(POW-ON)
(A-MUTE)
(BATT)
(OUT-REM)
(IN-INT)
(IN-PAUSE)
(LAMP)
(LCD)
E240 10/16
R203 1.2K
R201 220
E239 10/16
R204 1.2K
R202 220
R206 1K
R205 1K
C202 0.01
C201 0.01
SIGNAL SELECTOR & ELECTRIC VOLUME
IC201 TEA6300T
E203 0.68/50
C203 0.033
C205 5600P
SOURCE SELECTOR
VOLUME BALANCE
BASS LOUDNESS
TREBLE LOUDNESS
FADER MUTE
POWER SUPPLY
I2C BUS LOGIC
Vref
E204 0.68/50
C204 0.033
E207 10/16
E205 10/16
C206 5600P
E206 47/16
E227 10/16
E241 10/16
E242 10/16
R211 1.2K
R212 1.2K
R210 1K
R209 1K
ISOLATOR AMP
E243 4.7/50
IC212 XRA4560F
R295 22K
E263 10/16
R297 22K
E261 10/16
R299 22K
C225 10P
C224 10P
R213 22K
C223 10P
R298 22K
R214 22K
C222 10P
R296 22K
E262 10/16
R294 22K
E260 10/16
IC211 XRA4560F
R281 22K
E223 10/16
R287 22K
R283 22K
E225 10/16
C219 10P
C218 10P
R285 22K
C217 10P
R288 22K
R286 22K
C216 10P
R284 22K
E226 10/16
R282 22K
E224 10/16
R261 8.2K
R262 8.2K
R235 8.2K
R267 8.2K
IC209 NJM5532M
PRE AMP
E235 4.7/50
E233 10/16
R269 100
R273 22K
R291 4.7K
R290 4.7K
E234 10/16
R270 100
R274 22K
R263 8.2K
R264 8.2K
R289 8.2K
R268 8.2K
IC210 NJM5532M
E238 4.7/50
E237 10/16
R271 100
R275 22K
R293 4.7K
R292 4.7K
E236 10/16
R272 100
R276 22K
Q602 DTA124
R602 22K
D601 1SS133
BUS LINE CONTROL
Q601 DTC124K
Q603 DTC124K
MUTE DRIVER
R841 10K
D802 DAN202K
Q201 2SD1859
R223 1K-1/4
Q805 2SB1243
R815 10K
Q807 2SD2008Q
R814 2.2K
REGULATOR
POWER ON CONTROL
R813 2.2K-1/4
R840 2.2K-1/4
Q806 DTC144K
E209 100/10
E208 1/50
ZD201 HZS9C1L
E807 1/50
ZD802 HZS6C3L
(BATT)
Q809 FMC2
Q810 2SA1037K
R816 10K
D804 11ES2
R818 2.2K
D803 DAN202K
E809 0.47/50
E810 10/16
E811 10/16
R817 220K
ZD803 HZS9C1L
D805 1SS133
ACC SW
(POW-ON)
(LCD-ON)
(POW-IC)
(OUT-REM)
(IN-INT)
(IN-PAUSE)
(LAMP)
(LCD)


IC701
IC602
IC201
IC801
IC212 IC211
IC209 IC210
Q604
Q802
Q803
Q201
Q806 Q805
Q807
Q809
Q810
Q601 Q602 Q603
Q291 Q290
Q293 Q292
(R)
(L)
(AUDIO+B)
L702 220μH
IC701
BA9700AF
ERROR AMP
Bandgapp Reference
Triangle Oscillator
PWM COMPA-RATOR
REGULATOR SWITCHING
IC201
TEA6300T
SOURCE SELECTOR
VOLUME BALANCE
BASS LOUDNESS
TREBLE LOUDNESS
FADER MUTE
POWER SUPPLY
I2C BUS LOGIC
SIGNAL SELECTOR & ELECTRIC VOLUME
ISOLATOR AMP
IC212
XRA4560F
IC211
XRA4560F
IC209
NJM5532M
IC210
NJM5532M
PRE AMP
MUTING
Q291
2SD1328
Q290
2SD1328
Q293
2SD1328
Q292
2SD1328
CB202
Lch
Rch
Front
Lch
Rch
Rear
ET201
RCA Output Connector
(F-L)
(R-L)
(F-R)
(R-R)
(LCD-ON)
(POW-IC)
(POW-ON)
(A-MUTE)
(BATT)
(S.G)
Q602 DTA124
Q601
DTC124K
Q603
DTC124K
BUS LINE CONTROL
(B-DATA)
(B-GND)
JK501
DIN Jack
(ACC)
To Main P.C.Board (3/3)
Q802
DTA114
FORCED STAND BY SWITCHING
IC801
S-8054ALB-LM
Q803
2SD601A
ACC ON/OFF DETECTOR
MUTE DRIVER
Q201
2SD1859
Q805
2SB1243
Q807 2SD2008Q
REGULATOR
POWER ON CONTROL
Q806
DTC144K
D802
DAN202K
Q809 FMC2
Q810
2SA1037K
ACC SWITCHING
NOSE POWER
Q604 FMC2
RESET
IC602
S-8052HNM-CR
(OUT-REM)
(IN-INT)
(IN-PAUSE)
(LAMP)
(LCD)

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

IC201

1	PS	15	SIG
2	0V	16	SIG
3	SIG	17	4.3V
4	SIG	18	0V
5	SIG	19	SIG
6	SIG	20	4.3V
7	SIG	21	4.3V
8	4.4V	22	SIG
9	NC	23	SIG
10	SIG	24	SIG
11	8.6V	25	SIG
12	4.3V	26	SIG
13	SIG	27	8.6V
14	SIG	28	PS

IC209 , 210

1	SIG
2	SIG
3	SIG
4	0V
5	SIG
6	SIG
7	SIG
8	8.6V

IC211, 212

1	4.3V / SIG	TAPE, RADIO / CHANGER
2	4.3V / SIG	TAPE, RADIO / CHANGER
3	4.3V / SIG	TAPE, RADIO / CHANGER
4	0V / 0V	TAPE, RADIO / CHANGER
5	4.3V / SIG	TAPE, RADIO / CHANGER
6	4.3V / SIG	TAPE, RADIO / CHANGER
7	4.3V / SIG	TAPE, RADIO / CHANGER
8	8.6V / 8.6V	TAPE, RADIO / CHANGER

IC701

1	0V	8	PS
2	0.9V	9	NC
3	PS	10	5V
4	1.25V	11	NC
5	1.25V	12	1.25V
6	NC	13	1.25V
7	0V	14	1.25V

IC602

1	5V
2	5V
3	0V

IC801

1	5.2V
2	6.6V
3	0V

IC601

1	4.8V	21	0V	41	4.9V	61	PS
2	4.8V	22	4.9V	42	4.9V	62	0V
3	0V	23	4.9V	43	0V	63	0V
4	0V	24	4.9V	44	0V	64	0V
5	SIG	25	4.9V	45	0.4V	65	0V
6	SIG	26	0V	46	4.8V	66	0V
7	0V	27	4.9V	47	0V	67	0V
8	SIG	28	4.9V	48	0V	68	PS
9	SIG	29	4.9V	49	0V	69	PS
10	4.9V	30	4.9V	50	0V	70	PS
11	5.3V	31	4.9V	51	0V	71	PS
12	5.3V	32	4.9V	52	0V	72	PS
13	PS	33	4.9V	53	4.9V	73	PS
14	5.3V	34	4.9V	54	0V	74	4.9V
15	5.3V	35	4.9V	55	4.9V	75	4.8V
16	0V	36	PS	56	PS	76	2.4V
17	0V	37	PS	57	PS	77	PS
18	4.9V	38	0V	58	PS	78	0V
19	0V	39	PS	59	PS	79	0V
20	0V	40	4.9V	60	PS	80	0V

	E	C	B
Q201	0V	14.25V	9.2V
Q290	0V	0V	0.46V
Q291	0V	0V	0.5V
Q292	0V	0V	0.46V
Q293	0V	0V	0.46V
Q601	0V	PS	PS
Q602	4.98V	PS	PS
Q603	0V	PS	PS
Q605	4.99V	4.87V	0V
Q606	0V	0V	4.98V
Q802	5.31V	5.3V	0V
Q803	0V	0V	0.62V
Q805	14.25V	14.19V	13.54V
Q806	0V	0.12V	4.94V
Q807	5.7V	14.25V	6.32V
Q810	9.28V	0V	8.72V

	E	C	B	MODE
Q703	14.4V / PS	0V / PS	14.4V / 14.1V	TAPE, RADIO / CHANGER

	1	2	3	4	5
Q019	0V	0V	0V	SIG	SIG
Q604	4.98V	4.97V	0V	0.73V	4.97V
Q809	14.27V	0V	0V	PS	14.22V

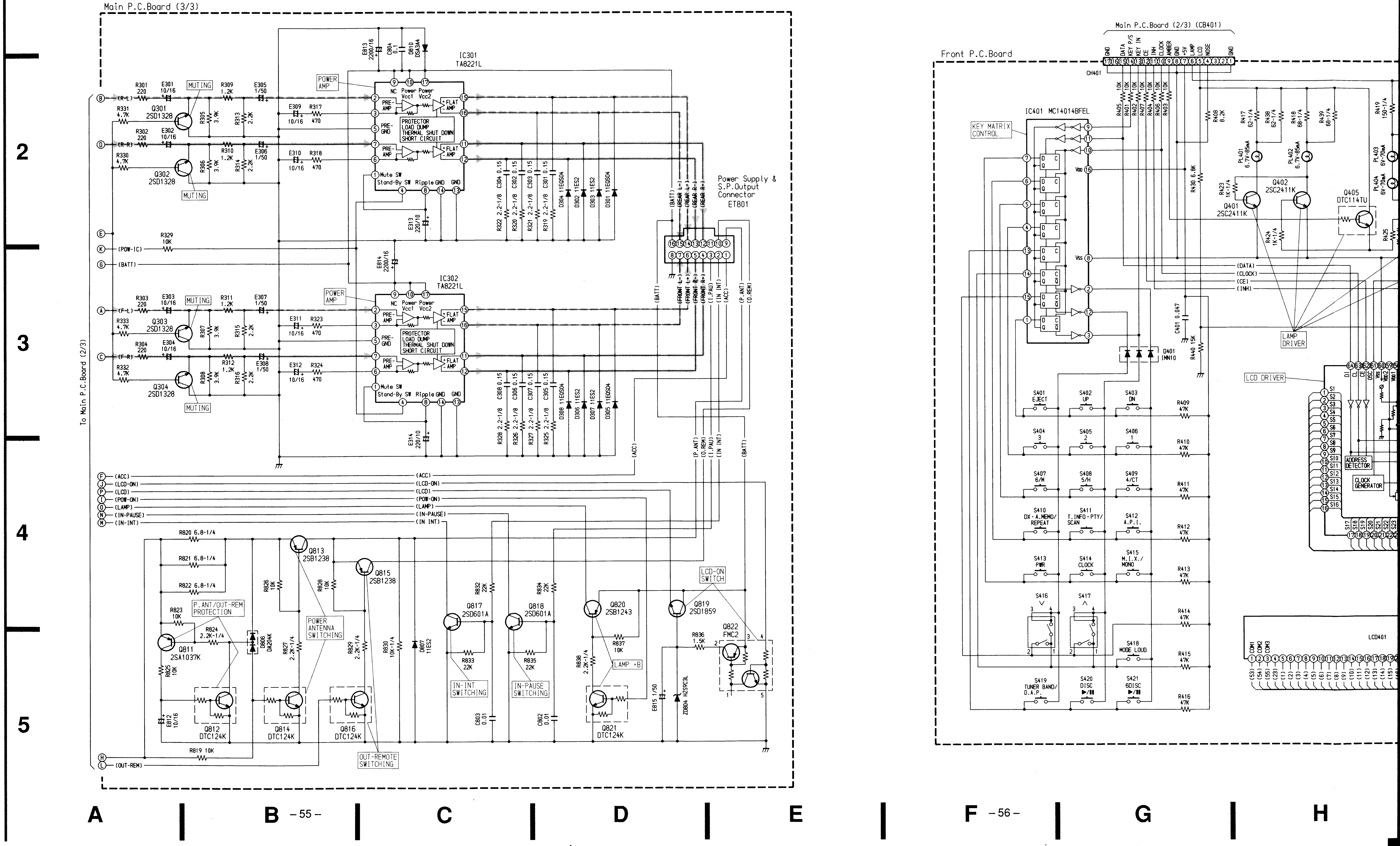
<Measuring Conditions>

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : CD : Be Playing back the 2nd Music of the test CD (YEDS-18)

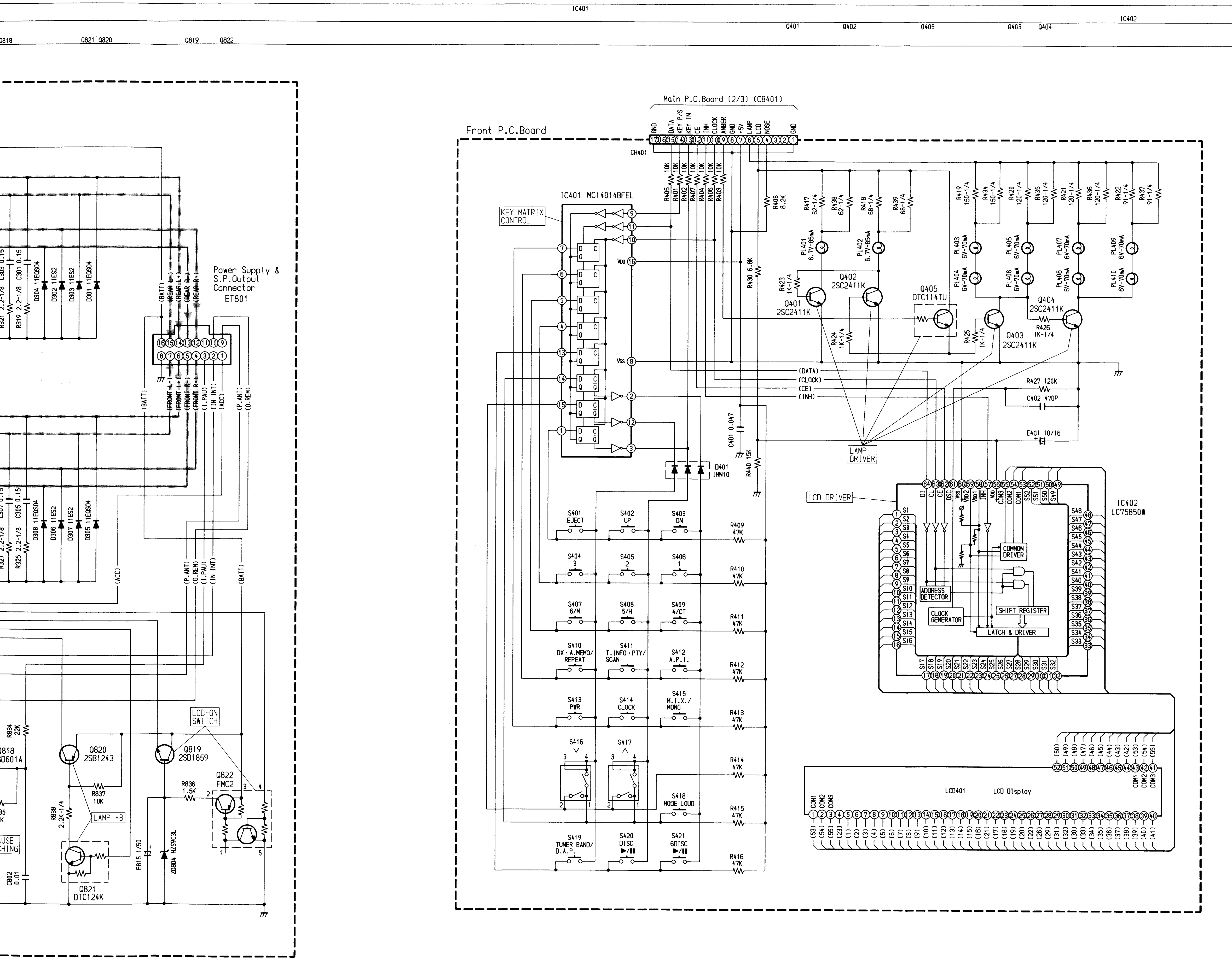
TUNER : No Signal Input
FM 98.1MHz
MW 999kHz
LW 216kHz

Schematic Diagram (3/4)

IC	IC302 IC301	IC401
Transistor (Q)	Q301 Q302 Q303 Q304 Q811 Q812 Q814 Q813 Q816 Q815 Q817 Q818 Q821 Q820 Q819 Q822	Q401 Q402 Q405



1
2
3
4
5
A
B
C
D
E
F
G
H
Main P.C.Board (3/3)
To Main P.C.Board (2/3)
IC301 TA8221L
IC302 TA8221L
POWER AMP
PRE-AMP
FLAT AMP
PROTECTOR LOAD DUMP THERMAL SHUT DOWN SHORT CIRCUIT
Mute SW
Stand-By SW
Ripple GND
NC Power Vcc1 Power Vcc2
MUTING
Q301 2SD1328
Q302 2SD1328
Q303 2SD1328
Q304 2SD1328
(R-L)
(R-R)
(F-L)
(F-R)
(POW-IC)
(BATT)
(ACC)
(LCD-ON)
(LCD)
(POW-ON)
(LAMP)
(IN-PAUSE)
(IN-INT)
(OUT-REM)
Power Supply & S.P.Output Connector ET801
(REAR L-) (REAR L+) (REAR R-) (REAR R+)
(FRONT L-) (FRONT L+) (FRONT R-) (FRONT R+)
(I.PAU) (IN INT) (ACC) (P.ANT) (O.REM)
Q811 2SA1037K
Q812 DTC124K
Q813 2SB1238
Q814 DTC124K
Q815 2SB1238
Q816 DTC124K
Q817 2SD601A
Q818 2SD601A
Q819 2SD1859
Q820 2SB1243
Q821 DTC124K
Q822 FMC2
P.ANT/OUT-REM PROTECTION
POWER ANTENNA SWITCHING
OUT-REMOTE SWITCHING
IN-INT SWITCHING
IN-PAUSE SWITCHING
LAMP +B
LCD-ON SWITCH
D806 DA204K
D807 11ES2
ZD804 HZS9C3L
Front P.C.Board
Main P.C.Board (2/3) (CB401)
CN401
GND DATA KEY P/S KEY IN CE INH CLOCK AMBER GND +5V LAMP LCD NOSE GND
IC401 MC14014BFEL
KEY MATRIX CONTROL
LAMP DRIVER
LCD DRIVER
ADDRESS DETECTOR
CLOCK GENERATOR
LCD401
Q401 2SC2411K
Q402 2SC2411K
Q405 DTC114TU
PL401 6.7V-85mA
PL402 6.7V-85mA
PL403 6V-70mA
PL404 6V-70mA
D401 IMN10
(DATA) (CLOCK) (CE) (INH)
S401 EJECT
S402 UP
S403 DN
S404 3
S405 2
S406 1
S407 6/M
S408 5/H
S409 4/CT
S410 DX·A.MEMO/REPEAT
S411 T.INFO·PTY/SCAN
S412 A.P.I.
S413 PWR
S414 CLOCK
S415 M.I.X./MONO
S416
S417
S418 MODE LOUD
S419 TUNER BAND/D.A.P.
S420 DISC ▶/II
S421 6DISC ▶/II


IC401
IC402
Q401
Q402
Q405
Q403
Q404
Q818
Q821 Q820
Q819
Q822
Main P.C.Board (2/3) (CB401)
Front P.C.Board
GND
DATA
KEY P/S
KEY IN
CE
INH
CLOCK
AMBER
GND
+5V
LAMP
LCD
NOSE
GND
CH401
KEY MATRIX CONTROL
IC401 MC14014BFEL
R405 10K
R401 10K
R402 10K
R407 10K
R404 10K
R406 10K
R403 10K
R408 8.2K
R430 6.8K
R417 62-1/4
R438 62-1/4
R418 68-1/4
R439 68-1/4
R419 150-1/4
R434 150-1/4
R420 120-1/4
R435 120-1/4
R421 120-1/4
R436 120-1/4
R422 91-1/4
R437 91-1/4
PL401 6.7V-85mA
PL402 6.7V-85mA
PL403 6V-70mA
PL404 6V-70mA
PL405 6V-70mA
PL406 6V-70mA
PL407 6V-70mA
PL408 6V-70mA
PL409 6V-70mA
PL410 6V-70mA
Q401 2SC2411K
Q402 2SC2411K
Q405 DTC114TU
Q403 2SC2411K
Q404 2SC2411K
R423 1K-1/4
R424 1K-1/4
R425 1K-1/4
R426 1K-1/4
(DATA)
(CLOCK)
(CE)
(INH)
R427 120K
C402 470P
E401 10/16
C401 0.047
R440 15K
D401 IMN10
LAMP DRIVER
LCD DRIVER
IC402 LC75850W
ADDRESS DETECTOR
CLOCK GENERATOR
COMMON DRIVER
SHIFT REGISTER
LATCH & DRIVER
LCD401 LCD Display
S401 EJECT
S402 UP
S403 DN
S404 3
S405 2
S406 1
S407 6/M
S408 5/H
S409 4/CT
S410 DX・A.MEMO/REPEAT
S411 T.INFO・PTY/SCAN
S412 A.P.I.
S413 PWR
S414 CLOCK
S415 M.I.X./MONO
S416
S417
S418 MODE LOUD
S419 TUNER BAND/D.A.P.
S420 DISC ►/II
S421 6DISC ►/II
R409 47K
R410 47K
R411 47K
R412 47K
R413 47K
R414 47K
R415 47K
R416 47K
Power Supply & S.P.Output Connector ET801
(BATT)
(REAR L-)
(REAR L+)
(REAR R-)
(REAR R+)
(FRONT L-)
(FRONT L+)
(FRONT R-)
(FRONT R+)
(I.PAU)
(IN INT)
(ACC)
(P.ANT)
(O.REM)
C303 0.15
C301 0.15
C307 0.15
C305 0.15
R321 2.2-1/8
R319 2.2-1/8
R327 2.2-1/8
R325 2.2-1/8
D304 11EQS04
D302 11ES2
D303 11ES2
D301 11EQS04
D308 11EQS04
D306 11ES2
D307 11ES2
D305 11EQS04
R834 22K
Q818 2SD601A
Q820 2SB1243
Q819 2SD1859
LCD-ON SWITCH
R837 10K
R838 2.2K-1/4
LAMP +B
Q821 DTC124K
R836 1.5K
Q822 FMC2
E815 1/50
ZD804 HZS9C3L
C802 0.01

IC301, 302

1	5.6V	10	14.3V
2	SIG	11	SIG
3	SIG	12	SIG
4	3.3V	13	0V
5	0V	14	0V
6	SIG	15	SIG
7	SIG	16	SIG
8	5.6V	17	14.3V
9	14.3V		

IC401

1	0V	9	PS
2	PS	10	PS
3	PS	11	PS
4	4.9V	12	PS
5	4.9V	13	4.9V
6	4.9V	14	4.9V
7	4.9V	15	4.9V
8	0V	16	4.9V

IC402

1	PS	17	PS	33	PS	49	PS
2	PS	18	PS	34	PS	50	PS
3	PS	19	PS	35	PS	51	NC
4	PS	20	PS	36	PS	52	NC
5	PS	21	PS	37	PS	53	PS
6	PS	22	PS	38	PS	54	PS
7	PS	23	PS	39	PS	55	PS
8	PS	24	NC	40	PS	56	4.9V
9	PS	25	NC	41	PS	57	5V
10	PS	26	PS	42	PS	58	NC
11	PS	27	NC	43	PS	59	NC
12	PS	28	NC	44	PS	60	PS
13	PS	29	PS	45	PS	61	PS
14	PS	30	PS	46	PS	62	PS
15	PS	31	PS	47	PS	63	PS
16	PS	32	PS	48	PS	64	PS

	E	C	B
Q301	0V	0V	0.46V
Q302	0V	0V	0.46V
Q303	0V	0V	0.46V
Q304	0V	0V	0.46V
Q401	0V	0V	0.78V
Q402	0V	8.73V	0.16V
Q403	0V	13.6V	0.16V
Q404	0V	0.1V	0.81V
Q405	0.16V	9.28V	0V
Q811	4.2V	0V	14.2V
Q812	0V	14.2V	0V
Q813	14.17V	14.16V	0V
Q814	0V	0V	9.72V
Q815	14.16V	14.16V	13.46V
Q816	0V	0V	4.97V
Q817	0V	5.24V	0V
Q818	0V	5.26V	0V
Q819	9.21V	14.25V	9.82V
Q820	14.25V	14.19V	13.58V
Q821	0V	0V	4.95V

	1	2	3	4	5
Q822	14.27V	4.95V	0V	14.19V	0V

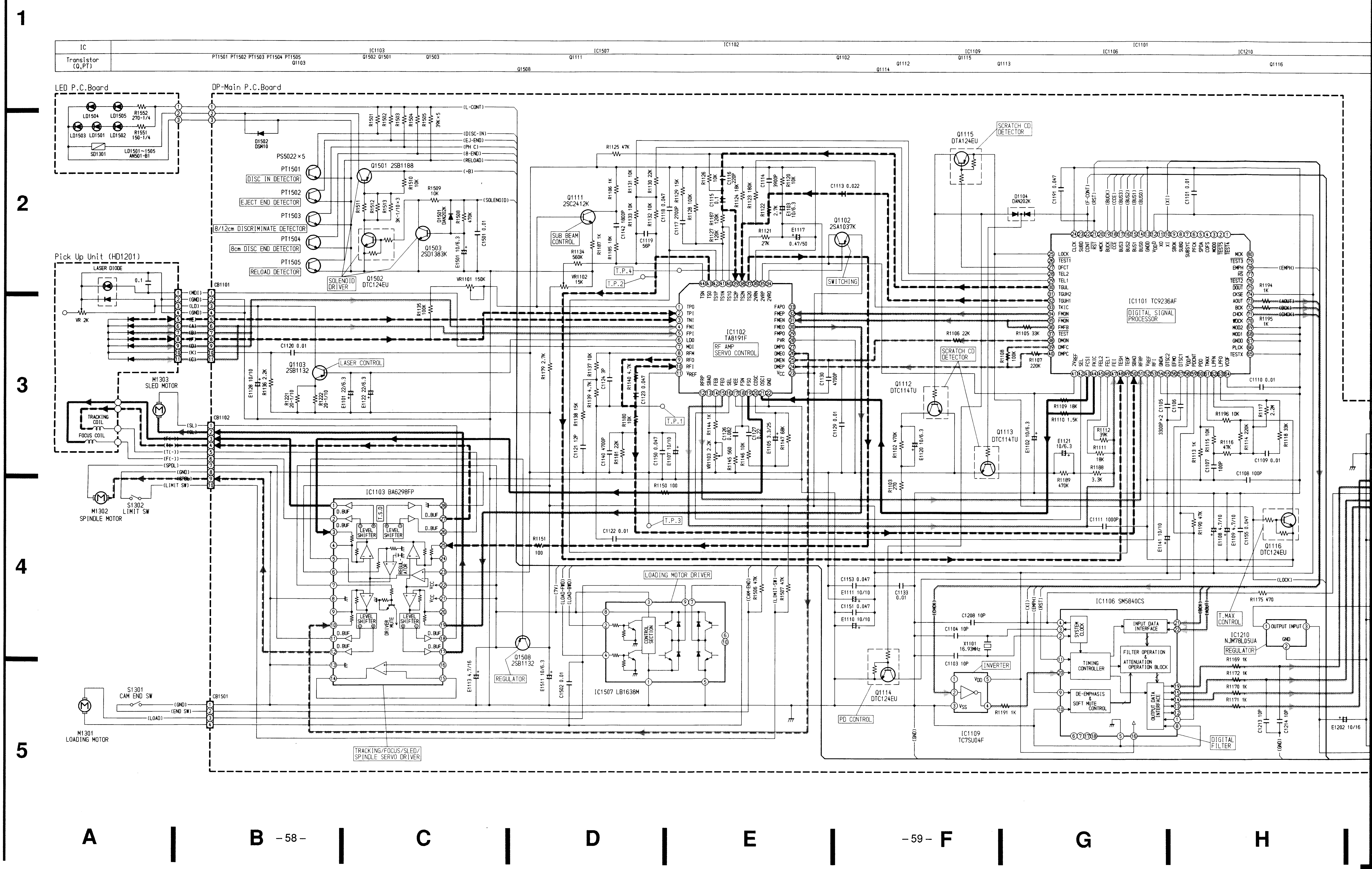
<Measuring Conditions>

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : CD : Be Playing back the 2nd
Music of the test CD (YEDS-18)
TUNER : No Signal Input
FM 98.1MHz
MW 999kHz
LW 216kHz

NOTES:

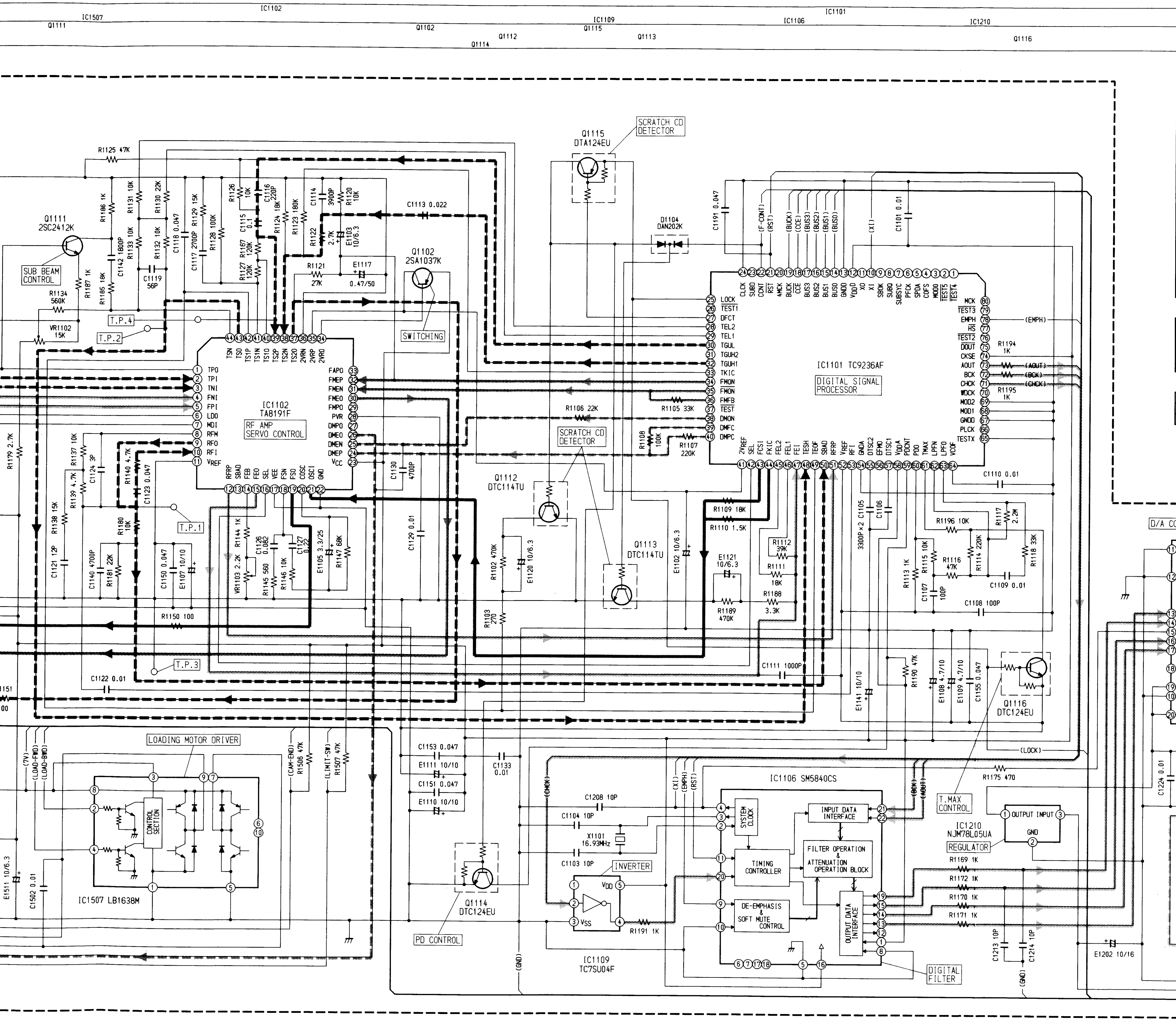
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

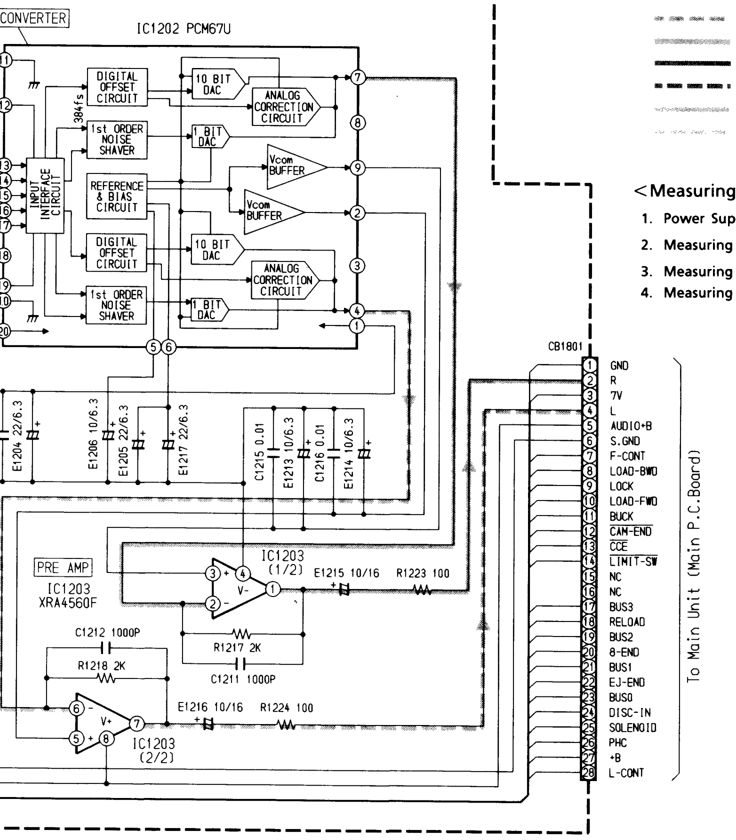
Schematic Diagram (4/4)


IC
Transistor (Q,PT)
IC1103
IC1507
IC1102
IC1109
IC1106
IC1101
IC1210
PT1501 PT1502 PT1503 PT1504 PT1505
Q1103
Q1502 Q1501
Q1503
Q1508
Q1111
Q1102
Q1114
Q1112
Q1115
Q1113
Q1116
LED P.C.Board
DP-Main P.C.Board
LD1504
LD1505
LD1503
LD1501
LD1502
R1552 270-1/4
R1551 150-1/4
SD1301
LD1501~1505 AN501-B1
D1502 DSM10
PS5022×5
PT1501
DISC IN DETECTOR
PT1502
EJECT END DETECTOR
PT1503
8/12cm DISCRIMINATE DETECTOR
PT1504
8cm DISC END DETECTOR
PT1505
RELOAD DETECTOR
Q1501 2SB1188
Q1502 DTC124EU
Q1503 2SD1383K
SOLENOID DRIVER
(L-CONT)
(DISC-IN)
(EJ-END)
(PH C)
(8-END)
(RELOAD)
(+B)
(SOLENOID)
Pick Up Unit (HD1201)
LASER DIODE
VR 2K
CB1101
(MDI)
(GND)
(LD)
(GND)
(E)
(A)
(B)
(F)
(D)
(K)
(C)
Q1103 2SB1132
LASER CONTROL
M1303 SLED MOTOR
TRACKING COIL
FOCUS COIL
CB1102
(SL)
(SL)
(F(+))
(T(+))
(T(-))
(F(-))
(SPDL)
(GND)
(LIMIT SW)
M1302 SPINDLE MOTOR
S1302 LIMIT SW
IC1103 BA6298FP
D.BUF
T.S.D
LEVEL SHIFTER
REGULATOR
DRIVER MUTE
VCC
TRACKING/FOCUS/SLED/SPINDLE SERVO DRIVER
Q1508 2SB1132
REGULATOR
S1301 CAM END SW
CB1501
(GND)
(END SW)
(LOAD)
M1301 LOADING MOTOR
LOADING MOTOR DRIVER
CONTROL SECTION
IC1507 LB1638M
(7V)
(LOAD-FWD)
(LOAD-BWD)
(CAM-END)
(LIMIT-SW)
Q1111 2SC2412K
SUB BEAM CONTROL
VR1101 150K
VR1102 15K
T.P.1
T.P.2
T.P.3
T.P.4
IC1102 TA8191F
RF AMP SERVO CONTROL
Q1102 2SA1037K
SWITCHING
Q1115 DTA124EU
SCRATCH CD DETECTOR
D1104 DAN202K
Q1112 DTC114TU
Q1113 DTC114TU
SCRATCH CD DETECTOR
Q1114 DTC124EU
PD CONTROL
IC1101 TC9236AF
DIGITAL SIGNAL PROCESSOR
(EMPH)
(AOUT)
(BCK)
(CHCK)
(LOCK)
Q1116 DTC124EU
T.MAX CONTROL
IC1106 SM5840CS
SYSTEM CLOCK
INPUT DATA INTERFACE
TIMING CONTROLLER
FILTER OPERATION & ATTENUATION OPERATION BLOCK
DE-EMPHASIS & SOFT MUTE CONTROL
OUTPUT DATA INTERFACE
DIGITAL FILTER
X1101 16.93MHz
INVERTER
IC1109 TC7SU04F
IC1210 NJM78L05UA
REGULATOR
OUTPUT INPUT GND
(GND)
E1202 10/16
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$


IC1507
Q1111
IC1102
Q1102
Q1112
Q1114
IC1109
Q1115
Q1113
IC1106
IC1101
IC1210
Q1116
IC1203
IC1202
Q1111
2SC2412K
SUB BEAM CONTROL
Q1102
2SA1037K
SWITCHING
Q1115
DTA124EU
SCRATCH CD DETECTOR
D1104
DAN202K
IC1102
TA8191F
RF AMP SERVO CONTROL
IC1101 TC9236AF
DIGITAL SIGNAL PROCESSOR
Q1112
DTC114TU
SCRATCH CD DETECTOR
Q1113
DTC114TU
Q1116
DTC124EU
T.P.1
T.P.2
T.P.3
T.P.4
LOADING MOTOR DRIVER
CONTROL SECTION
IC1507 LB1638M
Q1114
DTC124EU
PD CONTROL
IC1109
TC7SU04F
INVERTER
X1101
16.934MHz
IC1106 SM5840CS
SYSTEM CLOCK
TIMING CONTROLLER
DE-EMPHASIS & SOFT MUTE CONTROL
INPUT DATA INTERFACE
FILTER OPERATION & ATTENUATION OPERATION BLOCK
OUTPUT DATA INTERFACE
DIGITAL FILTER
T.MAX CONTROL
IC1210
NJM78L05UA
REGULATOR
OUTPUT INPUT GND
(LOCK)
(EMPH)
(AOUT)
(BCK)
(CHCK)


D/A CONVERTER
IC1202 PCM67U
DIGITAL OFFSET CIRCUIT
10 BIT DAC
ANALOG CORRECTION CIRCUIT
1st ORDER NOISE SHAVER
1 BIT DAC
REFERENCE & BIAS CIRCUIT
Vcom BUFFER
INPUT INTERFACE CIRCUIT
PRE AMP
IC1203
XRA4560F
IC1203 (1/2)
IC1203 (2/2)
CB1801
GND
R
7V
L
AUDIO+B
S.GND
F-CONT
LOAD-BWD
LOCK
LOAD-FWD
BUCK
CAM-END
CCE
LIMIT-SW
NC
NC
BUS3
RELOAD
BUS2
8-END
BUS1
EJ-END
BUS0
DISC-IN
SOLENOID
PHC
+B
L-CONT
To Main Unit (Main P.C.Board)

IC1101

1	4.8V	21	5V	41	4.3V	61	PS
2	4.8V	22	0V	42	5.1V	62	2.3V
3	NC	23	PS	43	2.6V	63	2.5V
4	PS	24	0V	44	2.6V	64	1.6V
5	PS	25	5.1V	45	2.2V	65	0V
6	PS	26	4.8V	46	2.2V	66	PS
7	PS	27	4.7V	47	2.2V	67	0.1V
8	PS	28	2.2V	48	2.2V	68	0.1V
9	5.1V	29	2.2V	49	2.2V	69	0.1V
10	2.5V	30	2.2V	50	2.5V	70	PS
11	2.4V	31	0.4V	51	2.4V	71	PS
12	5.1V	32	0.4V	52	2.2V	72	PS
13	0V	33	1.7V	53	PS	73	PS
14	PS	34	2.2V	54	0.1V	74	5.1V
15	PS	35	2.2V	55	2.6V	75	0V
16	PS	36	2.1V	56	2.6V	76	5V
17	PS	37	5V	57	2.6V	77	5.1V
18	PS	38	2.2V	58	5.1V	78	0V
19	PS	39	PS	59	PS	79	5V
20	PS	40	PS	60	PS	80	PS

IC1102

1	1.7V	16	4.9V	31	2V
2	2V	17	0V	32	2.1V
3	2V	18	PS	33	PS
4	2V	19	PS	34	4.4V
5	2V	20	PS	35	4.3V
6	3.9V	21	2.4V	36	2.1V
7	0.1V	22	0V	37	PS
8	2.1V	23	5V	38	2V
9	PS	24	PS	39	2V
10	PS	25	2.1V	40	PS
11	2.1V	26	PS	41	2V
12	PS	27	PS	42	2.1V
13	2.7V	28	2.1V	43	2.1V
14	2V	29	2.1V	44	2.1V
15	PS	30	2V		

IC1103

1	2.8V	15	5.8V
2	3V	16	2.1V
3	2.2V	17	3.1V
4	2.2V	18	2.6V
5	5.6V	19	2V
6	5.1V	20	2.2V
7	6.2V	21	6.2V
8	0V	22	6.2V
9	2.2V	23	2.1V
10	2.4V	24	2.2V
11	3.2V	25	2.1V
12	2.6V	26	2.7V
13	0V	27	3V
14	5.8V	28	0V

IC1106

1	5.1V
2	2.6V
3	2.6V
4	PS
5	0V
6	0V
7	0V
8	5.1V
9	0V
10	0V
11	4.9V
12	PS
13	PS
14	PS
15	PS
16	5.1V
17	0V
18	0V
19	PS
20	PS
21	PS
22	PS

IC1109

1	NC
2	PS
3	0V
4	PS
5	5.1V

IC1210

1	8.94V
2	0V
3	5V

IC1202

1	4.9V	11	0V
2	3.45V	12	3.45V
3	0V	13	0V
4	3.45V	14	3.45V
5	2.78V	15	2.78V
6	4.15V	16	4.15V
7	3.45V	17	3.45V
8	0V	18	0V
9	3.45V	19	5V
10	0V	20	5V

IC1203

1	4.6V
2	3.45V
3	3.45V
4	0V
5	3.45V
6	3.45V
7	4.6V
8	8.94V

IC1507

1	0V
2	0V
3	6.2V
4	0V
5	0V
6	NC
7	0V
8	6.2V
9	0V
10	NC

	E	C	B
Q1102	5.1V	4.3V	4.5V
Q1103	4.6V	1.8V	4V
Q1111	1.1V	1.2V	1.8V
Q1112	2.2V	2.1V	0V
Q1113	2.1V	2.1V	5V
Q1114	0V	5V	0V
Q1115	5V	0V	5V
Q1116	2.1V	2.1V	5V
Q1501	14V	0V	14V
Q1502	0V	14V	0V
Q1503	0V	0V	0V
Q1508	6.2V	5.1V	5.6V

━━━ R-ch Signal Line
- - - - L-ch Signal Line
━━━ CD Signal Line (Digital)
━━━ Focus Servo Signal Line
▬ ▬ ▬ Tracking Servo Signal Line
━━━ Sled Servo Signal Line
- - - - Spindle Servo Signal Line

<Measuring Conditions>

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : CD : Be Playing back the 2nd Music of the test CD (YEDS-18)

TUNER : No Signal Input
FM 98.1MHz
MW 999kHz
LW 216kHz

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. =	Resistor	CAP. =	Capacitor
C.F. =	Carbon Film	ELY. =	Electrolytic
M.F. =	Metal Film	CER. =	Ceramic
M.O. =	Metal Oxide Film	MYL. =	Mylar
M.P. =	Metal Plate	TAN. =	Tantalum
TR. =	Transistor	POLY. =	Polystyrol
TRANS. =	Transformer	PP. =	Polypropylene
CP. =	Chip	PLT. =	Polyethylene
		PF. =	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC001	51T40941U03	MC14066BFL1
IC002	51T65379F22	XRA4558F
IC003	51T65379F22	XRA4558F
IC004	51T35504W02	LC7219
IC005	51T35503W02	LC7073M
IC006	51T55054W02	SAA6579T
IC201	51T83607F05	TEA6300T
IC209	51T93335F01	NJM5532M
IC210	51T93335F01	NJM5532M
IC211	51T92001F21	XRA4560F
IC212	51T92001F21	XRA4560F
IC301	51T25614W02	TA8221L
IC302	51T25614W02	TA8221L
IC501	51T45258W01	45258W01
IC502	51T93532F04	TC4S81F
IC503	51T84723F02	LC3516AML
IC504	51T55640W01	MC74HC373
IC601	51T55384W04	55384W04
IC602	51T95014F13	S-8052HNM-CR
IC701	51T35436W02	BA9700AF
IC801	51T95014F09	S-8054ALB-LM

Transistors

Symbol No.	Part No.	Description
Q001	48T73888F08	CP., FMG1
Q002	48T62966F03	CP., DTA124
Q003	48T62967F09	CP., DTC114TK
Q004	48T62967F03	CP., DTC124K
Q005	48T73888F08	CP., FMG1
Q007	48T73888F08	CP., FMG1
Q008	48T62967F03	CP., DTC124K
Q009	48T84234F03	2SB1238
Q010	48T84234F03	2SB1238
Q011	48T62967F03	CP., DTC124K
Q012	48T80615F01	CP., 2SD1766
Q014	48T83835F03	2SD1859
Q015	48T63420F01	CP., 2SA1037K
Q016	48T62967F03	CP., DTC124K
Q019	48T73888F08	CP., FMG1
Q020	48T52438F01	CP., 2SD601A
Q201	48T83835F03	2SD1859
Q290	48T63788F01	CP., 2SD1328
Q291	48T63788F01	CP., 2SD1328
Q292	48T63788F01	CP., 2SD1328
Q293	48T63788F01	CP., 2SD1328
Q301	48T63788F01	CP., 2SD1328
Q302	48T63788F01	CP., 2SD1328
Q303	48T63788F01	CP., 2SD1328
Q304	48T63788F01	CP., 2SD1328
Q501	48T80674F01	FET, CP. 2SK621
Q502	48T73888F12	CP., FMC2
Q601	48T62967F03	CP., DTC124K
Q602	48T62966F03	CP., DTA124
Q603	48T62967F03	CP., DTC124K
Q604	48T73888F12	CP., FMC2
Q605	48T62966F02	CP., DTA114
Q606	48T62967F04	CP., DTC144K
Q703	48T15511W02	CP., 2SB1261
Q802	48T62966F02	CP., DTA114
Q803	48T52438F01	CP., 2SD601A
Q805	48T84366F01	2SB1243
Q806	48T62967F04	CP., DTC144K
Q807	48T15289W03	2SD2008Q
Q809	48T73888F12	CP., FMC2
Q810	48T63420F01	CP., 2SA1037K
Q811	48T63420F01	CP., 2SA1037K
Q812	48T62967F03	CP., DTC124K
Q813	48T84234F03	2SB1238
Q814	48T62967F03	CP., DTC124K
Q815	48T84234F03	2SB1238
Q816	48T62967F03	CP., DTC124K
Q817	48T52438F01	CP., 2SD601A
Q818	48T52438F01	CP., 2SD601A
Q819	48T83835F03	2SD1859
Q820	48T84366F01	2SB1243
Q821	48T62967F03	CP., DTC124K
Q822	48T73888F12	CP., FMC2

Symbol No.	Part No.	Description
Diodes		
D001	48T63462F01	CP., DAN202K
D002	48T68828F11	1SS133
D003	48T68828F11	1SS133
D004	48T68828F11	1SS133
D005	48T63463F01	CP., DAP202K
D007	48T68828F11	1SS133
D301	48T55247W02	11EQS04
D302	48T84052F11	11ES2
D303	48T84052F11	11ES2
D304	48T55247W02	11EQS04
D305	48T55247W02	11EQS04
D306	48T84052F11	11ES2
D307	48T84052F11	11ES2
D308	48T55247W02	11EQS04
D501	48T63462F01	CP., DAN202K
D502	48T68828F11	1SS133
D601	48T68828F11	1SS133
D602	48T68828F11	1SS133
D603	48T63462F01	CP., DAN202K
D701	48T15702W01	CP., SB05-05CP
D801	48T68828F11	1SS133
D802	48T63462F01	CP., DAN202K
D803	48T63462F01	CP., DAN202K
D804	48T84052F11	11ES2
D805	48T68828F11	1SS133
D806	48T64134F01	CP., DA204K
D807	48T84052F11	11ES2
D809	48T68828F11	1SS133
D810	48T68580F02	DSA3A4
ZD001	48T25766W24	Zener, HZS9C1L
ZD002	48T25766W02	Zener, HZS6A2L
ZD003	48T25766W26	Zener, HZS9C3L
ZD201	48T25766W24	Zener, HZS9C1L
ZD801	48T25766W04	Zener, HZS6B1L
ZD802	48T25766W09	Zener, HZS6C3L
ZD803	48T25766W24	Zener, HZS9C1L
ZD804	48T25766W26	Zener, HZS9C3L
Crystals		
X001	91T25806W43	7.2Hz
X002	91T25806W18	4.33MHz
X011	91T15848W01	CER., Lock 4MHz
X501	91T25806W44	7.37MHz
X601	91T25806W42	7.15MHz
X602	91T15849W02	32.768KHz

Symbol No.	Part No.	Description	
Switch			
S801	40T16096W03	Tact, SKHHLW (RESET)	
Thermistor			
TH601	48T93439F06	100K ohm	
Coils			
L701	24T16271W13	220μH	
L702	24T16271W13	220μH	
Capacitors			
C001	08S65128F69	CP.,	0.01μF
C002	08S65128F57	CP.,	1000pF
E002	23T25149W04	ELY.,	0.47μF / 50V
C003	08S65128F78	CP.,	0.022μF
E003	23T25149W13	ELY.,	100μF / 10V
C004	08S65128F78	CP.,	0.022μF
E004	23T25149W01	ELY.,	0.1μF / 50V
C005	08T15807W05	CP.,	0.1μF
E005	23T25149W01	ELY.,	0.1μF / 50V
C006	08S65128F29	CP.,	56pF
E006	23T25149W14	ELY.,	0.68F / 50V
C007	08S65128F69	CP.,	0.01μF
E007	23T25149W13	ELY.,	100μF / 10V
C008	08T15399W02	CP.,	0.033μF
E008	23T25149W16	ELY.,	22μF / 6.3V
C009	08S65128F69	CP.,	0.01μF
E009	23S16086W01	ELY.,	220μF / 10V
C010	08T90316F29	TF,	0.1μF
E010	23T25149W09	ELY.,	10μF / 16V
C011	08T90316F23	TF,	0.033μF
E011	23T25149W09	ELY.,	10μF / 16V
C012	08T90316F31	TF,	0.15μF
E012	23T25149W09	ELY.,	10μF / 16V
C013	08S65128F69	CP.,	0.01μF
E013	23T25149W09	ELY.,	10μF / 16V
C014	08S65128F69	CP.,	0.01μF
E014	23T25149W06	ELY.,	2.2μF / 50V
C015	08S65128F35	CP.,	100pF
C016	08S65128F76	CP.,	0.1μF
C017	08S65128F78	CP.,	0.022μF
C018	08S65128F78	CP.,	0.022μF
C019	08S65128F69	CP.,	0.01μF
C020	08S82122F23	CP.,	27pF
C021	08S82122F23	CP.,	27pF
E021	23T25149W05	ELY.,	1μF / 50V

Symbol No.	Part No.	Description
C022	08S65128F33	CP., 82pF
E022	23T25149W05	ELY., 1μF / 50V
C023	08S65128F27	CP., 47pF
C024	08S65128F53	CP., 560pF
E024	23S16086W03	ELY., 100μF / 16V
C033	08S65128F47	CP., 330pF
C035	08S65128F79	CP., 0.027μF
C036	08S65128F79	CP., 0.027μF
C037	08S65128F69	CP., 0.01μF
C038	08T15399W02	CP., 0.033μF
C040	08S65128F35	CP., 100pF
C099	23T82372F19	ELY., (B.P) 2.2μF / 50V
C201	08T55390W17	PF., 0.01μF
C202	08T55390W17	PF., 0.01μF
C203	08T90316F23	TF., 0.033μF
E203	23T25149W14	ELY., 0.68μF / 50V
C204	08T90316F23	TF., 0.033μF
E204	23T25149W14	ELY., 0.68μF / 50V
C205	08T55390W14	PF., 5600pF
E205	23T25149W09	ELY., 10μF / 16V
C206	08T55390W14	PF., 5600pF
E206	23T25149W12	ELY., 47μF / 16V
C207	08S65128F69	CP., 0.01μF
E207	23T25149W09	ELY., 10μF / 16V
E208	23T25149W05	ELY., 1μF / 50V
E209	23T25149W13	ELY., 100μF / 10V
C216	08S65128F12	CP., 10pF
C217	08S65128F12	CP., 10pF
C218	08S65128F12	CP., 10pF
C219	08S65128F12	CP., 10pF
C220	08S65128F57	CP., 1000pF
C222	08S65128F12	CP., 10pF
C223	08S65128F12	CP., 10pF
E223	23T25149W09	ELY., 10μF / 16V
C224	08S65128F12	CP., 10pF
E224	23T25149W09	ELY., 10μF / 16V
C225	08S65128F12	CP., 10pF
E225	23T25149W09	ELY., 10μF / 16V
E226	23T25149W09	ELY., 10μF / 16V
E227	23T25149W09	ELY., 10μF / 16V
E233	23T25149W09	ELY., 10μF / 16V
E234	23T25149W09	ELY., 10μF / 16V
E235	23T25149W08	ELY., 4.7μF / 50V
E236	23T25149W09	ELY., 10μF / 16V
E237	23T25149W09	ELY., 10μF / 16V
E238	23T25149W08	ELY., 4.7μF / 50V
E239	23T25149W09	ELY., 10μF / 16V
E240	23T25149W09	ELY., 10μF / 16V
E241	23T25149W09	ELY., 10μF / 16V
E242	23T25149W09	ELY., 10μF / 16V
E243	23T25149W08	ELY., 4.7μF / 50V
E260	23T25149W09	ELY., 10μF / 16V

Symbol No.	Part No.	Description
E261	23T25149W09	ELY., 10μF / 16V
E262	23T25149W09	ELY., 10μF / 16V
E263	23T25149W09	ELY., 10μF / 16V
C301	08T90316F31	TF, 0.15μF
E301	23T25149W09	ELY., 10μF / 16V
C302	08T90316F31	TF, 0.15μF
E302	23T25149W09	ELY., 10μF / 16V
C303	08T90316F31	TF, 0.15μF
E303	23T25149W09	ELY., 10μF / 16V
C304	08T90316F31	TF, 0.15μF
E304	23T25149W09	ELY., 10μF / 16V
C305	08T90316F31	TF, 0.15μF
E305	23T55405W15	ELY., 1μF / 50V
C306	08T90316F31	TF, 0.15μF
E306	23T55405W15	ELY., 1μF / 50V
C307	08T90316F31	TF, 0.15μF
E307	23T55405W15	ELY., 1μF / 50V
C308	08T90316F31	TF, 0.15μF
E308	23T55405W15	ELY., 1μF / 50V
E309	23T55405W01	ELY., 10μF / 16V
E310	23T55405W01	ELY., 10μF / 16V
E311	23T55405W01	ELY., 10μF / 16V
E312	23T55405W01	ELY., 10μF / 16V
E313	23S16086W01	ELY., 220μF / 10V
E314	23S16086W01	ELY., 220μF / 10V
C501	08S82122F23	CP., 27pF
E501	23T25149W13	ELY., 100μF / 10V
C502	08S82122F23	CP., 27pF
E502	23T25149W13	ELY., 100μF / 10V
C503	08S65128F35	CP., 100pF
E503	23T25149W03	ELY., 0.33μF / 50V
C504	08S65128F35	CP., 100pF
C505	08S65128F35	CP., 100pF
C506	08S65128F35	CP., 100pF
C507	08S65128F35	CP., 100pF
C509	08S65128F78	CP., 0.022μF
C510	08S65128F78	CP., 0.022μF
C511	08S65128F35	CP., 100pF
C512	08S65128F78	CP., 0.022μF
C513	08S65128F35	CP., 100pF
C514	08S65128F35	CP., 100pF
C601	08S65128F47	CP., 330pF
E601	23T25149W09	ELY., 10μF / 16V
C602	08S82122F18	CP., 16pF
E602	23T74437F32	TAN., 10μF / 16V
C603	08S82122F18	CP., 16pF
C604	08S82122F21	CP., 22pF
C605	08S82122F21	CP., 22pF
C606	08S65128F35	CP., 100pF
C607	08S65128F35	CP., 100pF
C701	08S65128F76	CP., 0.1μF
C702	08S65128F56	CP., 820pF

Symbol No.	Part No.	Description
C703	08S65128F55	CP., 680pF
E703	23S16086W03	ELY., 100μF / 16V
C704	08T15399W03	CP., 0.047μF
E704	23S16086W01	ELY., 220μF / 10V
E705	23S16086W01	ELY., 220μF / 10V
E801	23S16086W01	ELY., 220μF / 10V
C802	08S65128F69	CP., 0.01μF
C803	08S65128F69	CP., 0.01μF
E803	23T25149W05	ELY., 1μF / 50V
C804	08S65128F76	CP., 0.1μF
C805	08S65128F78	CP., 0.022μF
E807	23T25149W05	ELY., 1μF / 50V
E809	23T25149W04	ELY., 0.47μF / 50V
E810	23T25149W09	ELY., 10μF / 16V
E811	23T25149W09	ELY., 10μF / 16V
E812	23T25149W09	ELY., 10μF / 16V
E813	23T35505W12	ELY., 2200μF / 16V
E814	23T35505W12	ELY., 2200μF / 16V
E815	23T25149W05	ELY., 1μF / 50V
C999	08S65480F37	CER., 100pF

Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)

Symbol No.	Part No.	Description
R001	06S64995F53	1K ohm
R002	06S64995F77	10K ohm
R003	06S64995F77	10K ohm
R006	06S64995F93	47K ohm
R007	06S64995F93	47K ohm
R009	06S64995F77	10K ohm
R011	06S64995F77	10K ohm
R012	06S64995F77	10K ohm
R013	06S64995F61	2.2K ohm
R014	06S64995F37	220 ohm
R015	06S64995F61	2.2K ohm
R016	06S64995F29	100 ohm
R017	06S64995F77	10K ohm
R018	06S64995F85	22K ohm
R019	06S64995F53	1K ohm
R020	06S64995F61	2.2K ohm
R021	06S64995F53	1K ohm
R022	06S64995F71	5.6K ohm
R023	06S64995F53	1K ohm
R024	06S64995F77	10K ohm
R025	06S64996F02	100K ohm
R026	06S64996F20	560K ohm
R027	06S64995F69	4.7K ohm
R028	06S64996F14	330K ohm
R029	06S64995F29	100 ohm
R030	06S70072F41	330 ohm 1/4W
R032	06S64995F61	2.2K ohm
R033	06S70072F53	1K ohm 1/4W

Symbol No.	Part No.	Description
R034	06S64995F77	10K ohm
R035	06S70072F53	1K ohm 1/4W
R037	06S70072F53	1K ohm 1/4W
R038	06S64995F77	10K ohm
R039	06S64995F69	4.7K ohm
R042	06S64995F53	1K ohm
R049	06S64995F77	10K ohm
R050	06S64995F29	100 ohm
R051	06S64995F61	2.2K ohm
R067	06S64995F53	1K ohm
R069	06S64995F63	2.7K ohm
R070	06S64995F63	2.7K ohm
R071	06S64995F83	18K ohm
R072	06S64995F83	18K ohm
R073	06S64995F69	4.7K ohm
R074	06S64995F69	4.7K ohm
R089	06S64995F93	47K ohm
R092	06S64995F77	10K ohm
R201	06S64995F37	220 ohm
R202	06S64995F37	220 ohm
R203	06S64995F55	1.2K ohm
R204	06S64995F55	1.2K ohm
R205	06S64995F53	1K ohm
R206	06S64995F53	1K ohm
R209	06S64995F53	1K ohm
R210	06S64995F53	1K ohm
R211	06S64995F55	1.2K ohm
R212	06S64995F55	1.2K ohm
R213	06S64995F85	22K ohm
R214	06S64995F85	22K ohm
R223	06S70072F53	1K ohm 1/4W
R224	06S64995F53	1K ohm
R225	06S64995F69	4.7K ohm
R226	06S64996F02	100K ohm
R227	06S64996F02	100K ohm
R235	06S64995F75	8.2K ohm
R261	06S64995F75	8.2K ohm
R262	06S64995F75	8.2K ohm
R263	06S64995F75	8.2K ohm
R264	06S64995F75	8.2K ohm
R267	06S64995F75	8.2K ohm
R268	06S64995F75	8.2K ohm
R269	06S64995F29	100 ohm
R270	06S64995F29	100 ohm
R271	06S64995F29	100 ohm
R272	06S64995F29	100 ohm
R273	06S64995F85	22K ohm
R274	06S64995F85	22K ohm
R275	06S64995F85	22K ohm
R276	06S64995F85	22K ohm
R277	06S64995F29	100 ohm
R278	06S64995F29	100 ohm

Symbol No.	Part No.	Description
R279	06S64995F29	100 ohm
R280	06S64995F29	100 ohm
R281	06S64995F85	22K ohm
R282	06S64995F85	22K ohm
R283	06S64995F85	22K ohm
R284	06S64995F85	22K ohm
R285	06S64995F85	22K ohm
R286	06S64995F85	22K ohm
R287	06S64995F85	22K ohm
R288	06S64995F85	22K ohm
R289	06S64995F75	8.2K ohm
R290	06S64995F69	4.7K ohm
R291	06S64995F69	4.7K ohm
R292	06S64995F69	4.7K ohm
R293	06S64995F69	4.7K ohm
R294	06S64995F85	22K ohm
R295	06S64995F85	22K ohm
R296	06S64995F85	22K ohm
R297	06S64995F85	22K ohm
R298	06S64995F85	22K ohm
R299	06S64995F85	22K ohm
R301	06S64995F37	220 ohm
R302	06S64995F37	220 ohm
R303	06S64995F37	220 ohm
R304	06S64995F37	220 ohm
R305	06S64995F67	3.9K ohm
R306	06S64995F67	3.9K ohm
R307	06S64995F67	3.9K ohm
R308	06S64995F67	3.9K ohm
R309	06S64995F55	1.2K ohm
R310	06S64995F55	1.2K ohm
R311	06S64995F55	1.2K ohm
R312	06S64995F55	1.2K ohm
R313	06S64995F61	2.2K ohm
R314	06S64995F61	2.2K ohm
R315	06S64995F61	2.2K ohm
R316	06S64995F61	2.2K ohm
R317	06S64995F45	470 ohm
R318	06S64995F45	470 ohm
R319	06S53331F40	2.2 ohm 1/8W
R320	06S53331F40	2.2 ohm 1/8W
R321	06S53331F40	2.2 ohm 1/8W
R322	06S53331F40	2.2 ohm 1/8W
R323	06S64995F45	470 ohm
R324	06S64995F45	470 ohm
R325	06S53331F40	2.2 ohm 1/8W
R326	06S53331F40	2.2 ohm 1/8W
R327	06S53331F40	2.2 ohm 1/8W
R328	06S53331F40	2.2 ohm 1/8W
R329	06S64995F77	10K ohm
R330	06S64995F69	4.7K ohm
R331	06S64995F69	4.7K ohm

Symbol No.	Part No.	Description
R332	06S64995F69	4.7K ohm
R333	06S64995F69	4.7K ohm
R501	06S64996F02	100K ohm
R502	06S64995F53	1K ohm
R503	06S64995F93	47K ohm
R504	06S64995F93	47K ohm
R505	06S64995F93	47K ohm
R506	06S64995F93	47K ohm
R507	06S64995F93	47K ohm
R508	06S64995F93	47K ohm
R509	06S64996F02	100K ohm
R510	06S64995F77	10K ohm
R511	06S64996F38	10M ohm
R602	06S64995F85	22K ohm
R603	06S53330F85	22Kohm 1/8W
R604	06S70072F37	220 ohm 1/4W
R605	06S64995F69	4.7K ohm
R606	06S64995F93	47K ohm
R607	06S64995F61	2.2K ohm
R608	06S64995F77	10K ohm
R609	06S64995F53	1K ohm
R610	06S64995F53	1K ohm
R611	06S64995F53	1K ohm
R612	06S64995F53	1K ohm
R613	06S64995F53	1K ohm
R614	06S64995F53	1K ohm
R615	06S64995F53	1K ohm
R616	06S64995F53	1K ohm
R617	06S64995F93	47K ohm
R618	06S64995F93	47K ohm
R619	06S64995F93	47K ohm
R620	06S64995F93	47K ohm
R621	06S64995F93	47K ohm
R622	06S64995F93	47K ohm
R623	06S64995F93	47K ohm
R624	06S64995F93	47K ohm
R625	06S64995F93	47K ohm
R627	06S64996F02	100K ohm
R628	06S64996F02	100K ohm
R632	06S64995F77	10K ohm
R633	06S64995F63	2.7K ohm
R634	06S64996F02	100K ohm
R635	06S64996F02	100K ohm
R636	06S64996F02	100K ohm
R637	06S64996F02	100K ohm
R638	06S64996F02	100K ohm
R639	06S64996F02	100K ohm
R640	06S64996F02	100K ohm
R641	06S64996F02	100K ohm
R642	06S64996F02	100K ohm
R643	06S64996F02	100K ohm
R644	06S64996F02	100K ohm

Symbol No.	Part No.	Description
R645	06S64996F02	100K ohm
R646	06S64996F02	100K ohm
R647	06S64996F02	100K ohm
R649	06S64996F02	100K ohm
R650	06S64996F02	100K ohm
R651	06S64996F02	100K ohm
R652	06S64996F02	100K ohm
R653	06S64996F02	100K ohm
R654	06S64996F02	100K ohm
R655	06S64996F02	100K ohm
R656	06S64995F93	47K ohm
R657	06S64996F02	100K ohm
R658	06S64996F02	100K ohm
R659	06S64995F85	22K ohm
R660	06S64995F85	22K ohm
R661	06S64996F02	100K ohm
R662	06S64996F02	100K ohm
R663	06S64995F77	10K ohm
R664	06S64996F02	100K ohm
R665	06S64996F02	100K ohm
R666	06S64996F02	100K ohm
R667	06S64996F02	100K ohm
R668	06S64996F02	100K ohm
R669	06S64996F02	100K ohm
R670	06S64996F02	100K ohm
R671	06S64996F26	1M ohm
R674	06S64995F53	1K ohm
R675	06S64995F53	1K ohm
R702	06S64995F91	39K ohm
R703	06S70072F45	470 ohm 1/4W
R704	06S70072F45	470 ohm 1/4W
R705	06S64995F74	7.5K ohm
R706	06S64995F81	15K ohm
R707	06S64995F93	47K ohm
R708	06S64995F77	10K ohm
R802	06S64996F02	100K ohm
R803	06S64995F77	10K ohm
R804	06S64995F93	47K ohm
R805	06S70072F65	3.3K ohm 1/4W
R813	06S70072F61	2.2K ohm 1/4W
R814	06S64995F61	2.2K ohm
R815	06S64995F77	10K ohm
R816	06S64995F77	10K ohm
R817	06S64996F10	220K ohm
R818	06S64995F61	2.2K ohm
R819	06S64995F77	10K ohm
R820	06S70072F03	6.8 ohm 1/4W
R821	06S70072F03	6.8 ohm 1/4W
R822	06S70072F03	6.8 ohm 1/4W
R823	06S64995F77	10K ohm
R824	06S70072F61	2.2K ohm 1/4W
R825	06S64995F77	10K ohm
R826	06S64995F77	10K ohm
R827	06S70072F61	2.2K ohm 1/4W
R828	06S64995F77	10K ohm
R829	06S70072F61	2.2K ohm 1/4W
R830	06S70072F77	10K ohm 1/4W
R832	06S64995F85	22K ohm
R833	06S64995F85	22K ohm
R834	06S64995F85	22K ohm
R835	06S64995F85	22K ohm
R836	06S64995F57	1.5K ohm
R837	06S64995F77	10K ohm
R838	06S70072F61	2.2K ohm 1/4W
R840	06S70072F61	2.2K ohm 1/4W
R841	06S64995F77	10K ohm

Front P. C. Board

IC's

Symbol No.	Part No.	Description
IC401	51T16618W02	MC14014BFEL
IC402	51T55492W01	LC75850W

Transistors

Symbol No.	Part No.	Description
Q401	48T63461F01	CP., 2SC2411K
Q402	48T63461F01	CP., 2SC2411K
Q403	48T63461F01	CP., 2SC2411K
Q404	48T63461F01	CP., 2SC2411K
Q405	48T94606F05	CP., DTC114TU

Diode

Symbol No.	Part No.	Description
D401	48T94471F01	IMN10

Switches

Symbol No.	Part No.	Description
S401	40T10876W12	Tact, SKHLAJ (EJECT)
S402	40T10876W12	Tact, SKHLAJ (UP)
S403	40T10876W12	Tact, SKHLAJ (DN)
S404	40T55182W01	Tact, SKHVBC (3)
S405	40T55182W01	Tact, SKHVBC (2)
S406	40T55182W01	Tact, SKHVBC (1)
S407	40T55182W01	Tact, SKHVBC (6 / M)
S408	40T55182W01	Tact, SKHVBC (5 / H)
S409	40T55182W01	Tact, SKHVBC (4 / CT)
S410	40T10876W12	Tact, SKHLAJ (DX·A.ME / REPEAT)
S411	40T10876W12	Tact, SKHLAJ (T.INFO·PTY / SCAN)
S412	40T10876W12	Tact, SKHLAJ (A.P.I.)
S413	40T55182W01	Tact, SKHVBC (PWR)
S414	40T55182W01	Tact, SKHVBC (CLOCK)

Symbol No.	Part No.	Description
S415	40T10876W12	Tact, SKHLAJ (M.I.X. / MONO)
S416	40T83612F01	Tact, SKHFAD (∨)
S417	40T83612F01	Tact, SKHFAD (∧)
S418	40T55182W01	Tact, SKHVBC (MODE LOUD)
S419	40T55182W01	Tact, SKHVBC (TUNER BAND / D.A.P.)
S420	40T55182W01	Tact, SKHVBC (DISC ► / ❚❚)
S421	40T55182W01	Tact, SKHVBC (6 DISC ► / ❚❚)
Lamps		
PL401	65T55442W02	6.7V-85mA
PL402	65T55442W03	6.7V-85mA
PL403	65T45353W01	6V-70mA
PL404	65T45353W01	6V-70mA
PL405	65T45353W01	6V-70mA
PL406	65T45353W01	6V-70mA
PL407	65T45353W02	6V-70mA
PL408	65T45353W02	6V-70mA
PL409	65T45353W02	6V-70mA
PL410	65T45353W02	6V-70mA
Capacitors		
C401	08T15399W03	CP., 0.047μF
E401	23T25149W09	ELY., 10μF / 16V
C402	08S82122F53	CP., 470pF
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R401	06S64995F77	10K ohm
R402	06S64995F77	10K ohm
R403	06S64995F77	10K ohm
R404	06S64995F77	10K ohm
R405	06S64995F77	10K ohm
R406	06S64995F77	10K ohm
R407	06S64995F77	10K ohm
R408	06S64995F75	8.2K ohm
R409	06S64995F93	47K ohm
R410	06S64995F93	47K ohm
R411	06S64995F93	47K ohm
R412	06S64995F93	47K ohm
R413	06S64995F93	47K ohm
R414	06S64995F93	47K ohm
R415	06S64995F93	47K ohm
R416	06S64995F93	47K ohm
R417	06S70072F24	62 ohm 1/4W

Symbol No.	Part No.	Description
R418	06S70072F25	68 ohm 1/4W
R419	06S70072F33	150 ohm 1/4W
R420	06S70072F31	120 ohm 1/4W
R421	06S70072F31	120 ohm 1/4W
R422	06S70072F28	91 ohm 1/4W
R423	06S70072F53	1K ohm 1/4W
R424	06S70072F53	1K ohm 1/4W
R425	06S70072F53	1K ohm 1/4W
R426	06S70072F53	1K ohm 1/4W
R427	06S64996F04	120K ohm
R430	06S64995F73	6.8K ohm
R434	06S70072F33	150 ohm 1/4W
R435	06S70072F31	120 ohm 1/4W
R436	06S70072F31	120 ohm 1/4W
R437	06S70072F28	91 ohm 1/4W
R438	06S70072F24	62 ohm 1/4W
R439	06S70072F25	68 ohm 1/4W
R440	06S64995F81	15K ohm

DP-Main P. C. Board

IC's		
IC1101	51T25985W02	TC9236AF
IC1102	51T25984W01	TA8191F
IC1103	51T45577W02	BA6298FP
IC1106	51T35105W02	SM5840CS
IC1109	51T35229W01	TC7SU04F
IC1202	51T35409W03	PCM67U
IC1203	51T92001F21	XRA4560F
IC1210	51T11054W02	NJM78L05UA
IC1507	51T55288W02	LB1638M
Transistors		
Q1102	48T63420F01	CP., 2SA1037K
Q1103	48T80611F01	CP., 2SB1132
Q1111	48T63417F01	CP., 2SC2412K
Q1112	48T94606F05	CP., DTC114TU
Q1113	48T94606F05	CP., DTC114TU
Q1114	48T94606F03	CP., DTC124EU
Q1115	48T94606F53	CP., DTA124EU
Q1116	48T94606F03	CP., DTC124EU
Q1501	48T80612F01	CP., 2SB1188
Q1502	48T94606F03	CP., DTC124EU
Q1503	48T81552F01	CP., 2SD1383K
Q1508	48T80611F01	CP., 2SB1132

Crystal

Symbol No.	Part No.	Description
X1101	91T45433W92	CP., 16.93MHz

Photo Transistors

Symbol No.	Part No.	Description
PT1501	48T15938W05	PS5022
PT1502	48T15938W05	PS5022
PT1503	48T15938W05	PS5022
PT1504	48T15938W05	PS5022
PT1505	48T15938W05	PS5022

Diodes

Symbol No.	Part No.	Description
D1104	48T63462F01	CP., DAN202K
D1501	48T63462F01	CP., DAN202K
D1502	48T15512W01	CP., DSM10

Capacitors

Symbol No.	Part No.	Description
C1101	08S45676W73	CP., 0.01µF
E1101	23T25191W42	CP., ELY. 22µF / 6.3V
E1102	23T25191W05	CP., ELY. 10µF / 6.3V
C1103	08S45677W12	CP., 10pF
E1103	23T25191W05	CP., ELY. 10µF / 6.3V
C1104	08S45677W12	CP., 10pF
C1105	08S45676W67	CP., 3300pF
E1105	23T25191W16	CP., ELY. 3.3µF / 25V
C1106	08S45676W67	CP., 3300pF
C1107	08S45677W36	CP., 100pF
E1107	23S55311W23	CP., TAN. 10µF / 10V
C1108	08S45677W36	CP., 100pF
E1108	23S55311W22	CP., TAN. 4.7µF / 10V
C1109	08S45676W73	CP., 0.01µF
E1109	23S55311W22	CP., TAN. 4.7µF / 10V
C1110	08S45676W73	CP., 0.01µF
E1110	23S55311W23	CP., TAN. 10µF / 10V
C1111	08S45676W60	CP., 1000pF
E1111	23S55311W23	CP., TAN. 10µF / 10V
C1113	08S45676W76	CP., 0.022µF
E1113	23T25191W12	CP., ELY. 4.7µF / 16V
C1114	08S45676W68	CP., 3900pF
C1115	08T35374W01	CP., 0.1µF
C1116	08S45677W44	CP., 220pF
C1117	08S45676W66	CP., 2700pF
E1117	23T25191W28	CP., ELY. 0.47µF / 50V
C1118	08S45676W78	CP., 0.047µF
C1119	08S45677W30	CP., 56pF

Symbol No.	Part No.	Description
C1120	08S45676W73	CP., 0.01µF
E1120	23T25191W05	CP., ELY. 10µF / 6.3V
C1121	08S45677W14	CP., 12pF
E1121	23T25191W05	CP., ELY. 10µF / 6.3V
C1122	08S45676W73	CP., 0.01µF
E1122	23T25191W42	CP., ELY. 22µF / 6.3V
C1123	08S45676W78	CP., 0.047µF
C1124	08S45677W05	CP., 3pF
C1126	08T35374W04	CP., 0.082µF
C1127	08T55487W02	CP., 0.22µF
E1128	23S55311W23	CP., TAN. 10µF / 10V
C1129	08S45676W73	CP., 0.01µF
C1130	08S45676W69	CP., 4700pF
C1133	08S45676W73	CP., 0.01µF
C1140	08S45676W69	CP., 4700pF
E1141	23S55311W23	CP., TAN. 10µF / 10V
C1142	08S45676W64	CP., 1800pF
C1150	08S45676W78	CP., 0.047µF
C1151	08S45676W78	CP., 0.047µF
C1153	08S45676W78	CP., 0.047µF
C1155	08S45676W78	CP., 0.047µF
C1191	08S45676W78	CP., 0.047µF
E1202	23T25191W41	CP., ELY. 10µF / 16V
E1204	23T25191W42	CP., ELY. 22µF / 6.3V
E1205	23T25191W42	CP., ELY. 22µF / 6.3V
E1206	23T25191W05	CP., ELY. 10µF / 6.3V
C1208	08S45677W12	CP., 10pF
C1211	08T55401W01	CP., 1000pF
C1212	08T55401W01	CP., 1000pF
C1213	08S45677W12	CP., 10pF
E1213	23T25191W05	CP., ELY. 10µF / 6.3V
C1214	08S45677W12	CP., 10pF
E1214	23T25191W05	CP., ELY. 10µF / 6.3V
C1215	08S45676W73	CP., 0.01µF
E1215	23T25191W41	CP., ELY. 10µF / 16V
C1216	08S45676W73	CP., 0.01µF
E1216	23T25191W41	CP., ELY. 10µF / 16V
E1217	23T25191W42	CP., ELY. 22µF / 6.3V
C1224	08S45676W73	CP., 0.01µF
C1501	08S45676W73	CP., 0.01µF
E1501	23T25191W05	CP., ELY. 10µF / 6.3V
C1502	08S45676W73	CP., 0.01µF
E1511	23T25191W05	CP., ELY. 10µF / 6.3V

Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)

Symbol No.	Part No.	Description
R1102	06S45675W22	470K ohm
R1103	06S45674W43	270 ohm
R1105	06S45674W93	33K ohm
R1106	06S45674W89	22K ohm

Symbol No.	Part No.	Description
R1107	06S45675W14	220K ohm
R1108	06S45675W06	100K ohm
R1109	06S45674W87	18K ohm
R1110	06S45674W61	1.5K ohm
R1111	06S45674W87	18K ohm
R1112	06S45674W95	39K ohm
R1113	06S45674W57	1K ohm
R1114	06S45675W14	220K ohm
R1115	06S45674W81	10K ohm
R1116	06S45674W97	47K ohm
R1117	06S45675W34	2.2M ohm
R1118	06S45674W93	33K ohm
R1120	06S45674W81	10K ohm
R1121	06S45674W91	27K ohm
R1122	06S45674W67	2.7K ohm
R1123	06S45675W12	180K ohm
R1124	06S45674W87	18K ohm
R1125	06S45674W97	47K ohm
R1126	06S45674W81	10K ohm
R1127	06S45675W08	120K ohm
R1128	06S45675W06	100K ohm
R1129	06S45674W85	15K ohm
R1130	06S45674W89	22K ohm
R1131	06S45674W81	10K ohm
R1132	06S45674W81	10K ohm
R1133	06S45674W81	10K ohm
R1134	06S45675W24	560K ohm
R1135	06S45675W06	100K ohm
R1136	06S45674W65	2.2K ohm
R1137	06S45674W81	10K ohm
R1138	06S45674W85	15K ohm
R1139	06S45674W73	4.7K ohm
R1140	06S45674W73	4.7K ohm
R1144	06S45674W57	1K ohm
R1145	06S45674W51	560 ohm
R1146	06S45674W81	10K ohm
R1147	06S45675W02	68K ohm
R1150	06S45674W33	100 ohm
R1151	06S45674W33	100 ohm
R1167	06S45675W08	120K ohm
R1169	06S45674W57	1K ohm
R1170	06S45674W57	1K ohm
R1171	06S45674W57	1K ohm
R1172	06S45674W57	1K ohm
R1175	06S45674W49	470 ohm
R1179	06S45674W67	2.7K ohm
R1180	06S45674W81	10K ohm
R1181	06S45674W89	22K ohm
R1185	06S45674W87	18K ohm
R1186	06S45674W57	1K ohm
R1187	06S45674W57	1K ohm
R1188	06S45674W69	3.3K ohm

Symbol No.	Part No.	Description
R1189	06S45675W22	470K ohm
R1190	06S45674W97	47K ohm
R1191	06S45674W57	1K ohm
R1194	06S45674W57	1K ohm
R1195	06S45674W57	1K ohm
R1196	06S45674W81	10K ohm
R1217	06S45674W64	2K ohm
R1218	06S45674W64	2K ohm
R1221	06S64995F12	20 ohm1/10W
R1222	06S64995F12	20 ohm1/10W
R1223	06S45674W33	100 ohm
R1224	06S45674W33	100 ohm
R1501	06S45674W95	39K ohm
R1502	06S45674W95	39K ohm
R1503	06S45674W95	39K ohm
R1504	06S45674W95	39K ohm
R1505	06S45674W95	39K ohm
R1506	06S45674W97	47K ohm
R1507	06S45674W97	47K ohm
R1508	06S45675W22	470K ohm
R1509	06S45674W81	10K ohm
R1510	06S45674W81	10K ohm
R1511	06S64995F64	3K ohm1/10W
R1512	06S64995F64	3K ohm1/10W
R1513	06S64995F64	3K ohm1/10W
VR1101	18T45357W20	Variable, 150Kohm
VR1102	18T45357W14	Variable, 15Kohm
VR1103	18T45357W09	Variable, 2.2Kohm

Miscellaneous

CB401	09T55607W14	17Pin Connector
CH401	09T55608W17	17Pin Connector
ET001	01T15513W11	Antenna Receptacle
ET201	01T25455W08	RCA Output Connector
ET801	09T55175W16	Power Supply & S.P. Output Connector
HD1201	88T55261W01	Pick Up Unit
JK501	09T55493W01	DIN Jack
LCD401	65T55397W01	LCD Display
M1301	01V53900W77	Assy., Loading Motor (3.5V-110mA)
M1302	59T55262W01	Motor, Spindle (3V-120mA)
M1303	01V54100W69	Assy., Sled Motor (3.5V-110mA)
S1301	40T71025F03	Switch, Detector (CAM END)
S1302	40T71025F03	Switch, Detector (LIMIT)
SD1301	01T55277W01	Assy., Solenoid

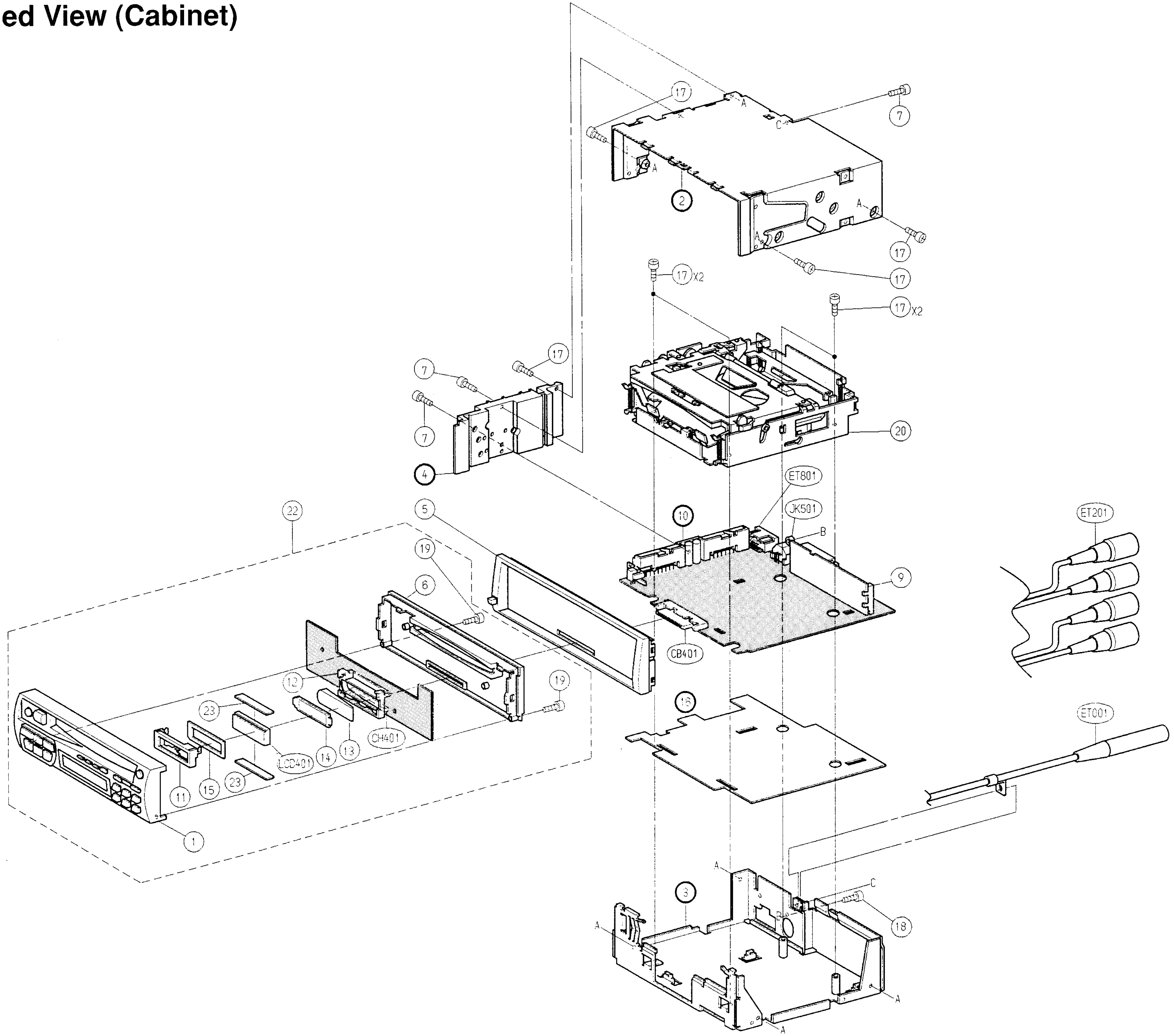
Cabinet Assembly Parts List

Note : No parts number on parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	4-B	13T55425W01	Assy, Nosepiece
5	3-D	13C51283W01	Assy, Front Escutcheon
6	3-C	13T55431W01	Nose, Bottom
7		03S44205G76	Screw, Pan (M2.6×8)
9	3-F	77B41467W01	FM /MW/LW Tuner, MB4R1010 (FE001)
11	4-B	15A50303W01	Cover, LCD
12	4-C	15B50304W01	Case, LCD
13	4-C	61A50305W01	Lens, LCD
14	4-C	26B50306W05	Reflector, Sheet (P)
15	4-B	14A58069W01	Insulator, LCD
17		03S44205G34	Screw, Pan (M2.6×5)
18	5-F	03S68555F04	Screw, Pan (M2.6×6)
19		03S68555F36	Screw, Pan (M2×10)
20	3-F	81D60067W01	CD Mechanism Deck, DP24H01B
22	3-C	01V61400W04	Assy, Nose Unit
23	4-B	75T35021W05	Rubber, Electric

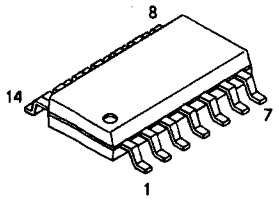
Symbol No.	Index	Part No.	Description

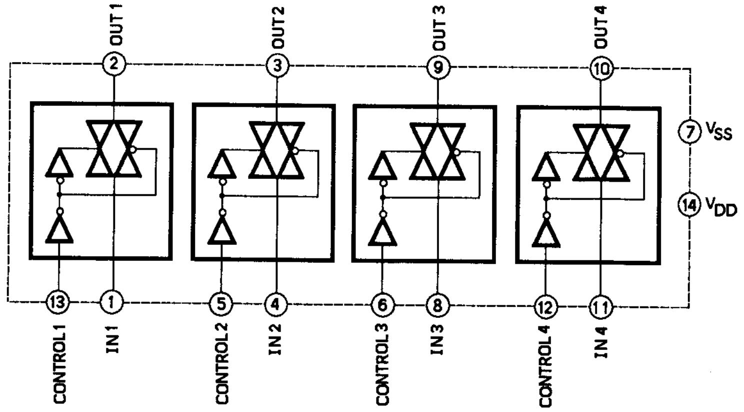
Exploded View (Cabinet)


17
7
A
C
A
2
A
A
17
17
17 X2
17 X2
17
7
7
4
20
ET801
JK501
B
10
9
5
22
19
6
CB401
ET201
12
23
14
13
CH401
LCD401
11
15
23
19
1
16
ET001
3
A
A
C
18
A
A
1
2
3
4
5
A
B
C
D
E
F
G
H

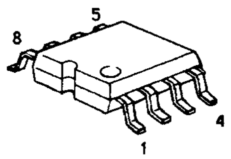
Semi - Conductor Lead Identifications

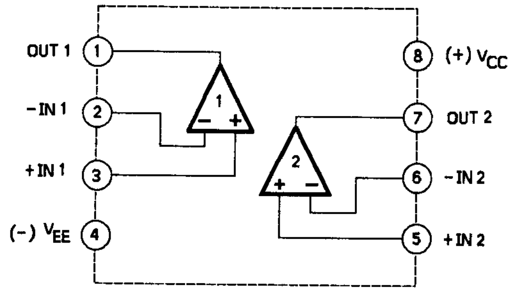
MC14066BFL1 : IC001



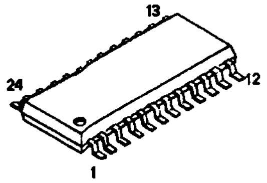

OUT 1
OUT 2
OUT 3
OUT 4
2
3
9
10
7 VSS
14 VDD
13
1
5
4
6
8
12
11
CONTROL1
IN1
CONTROL2
IN 2
CONTROL3
IN 3
CONTROL 4
IN 4

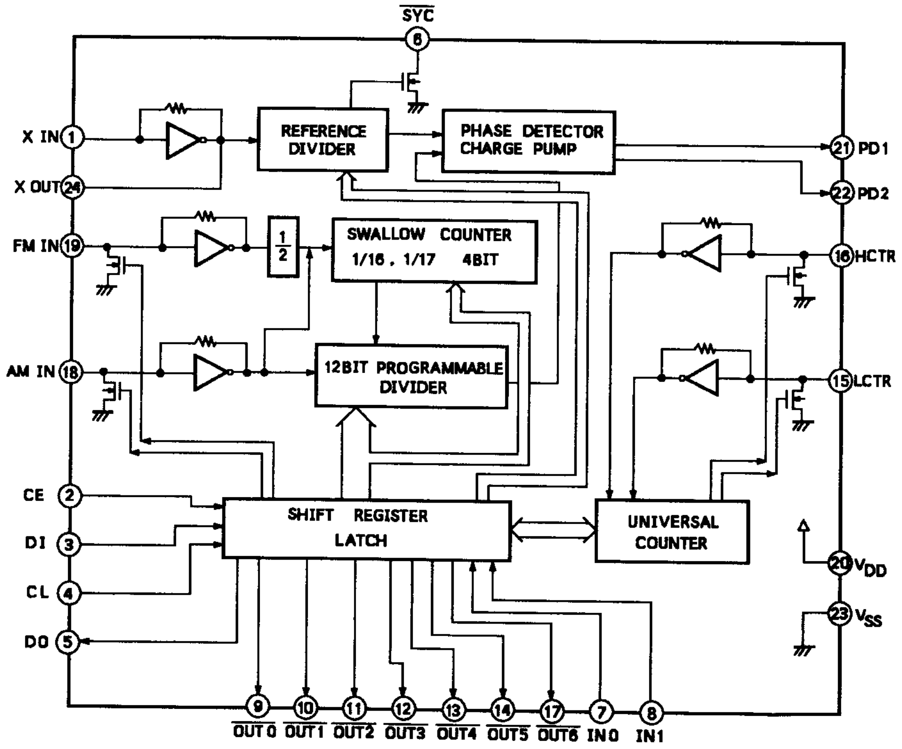
XRA4558F : IC002, 003
NJM5532M : IC209, 210
XRA4560F : IC211, 212, 1203 (DP24H01B)



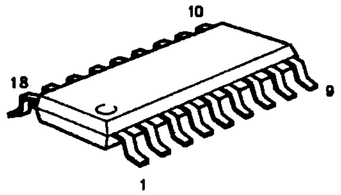

OUT 1 1
-IN 1 2
+IN 1 3
(-) VEE 4
8 (+) VCC
7 OUT 2
6 -IN 2
5 +IN 2
1
2

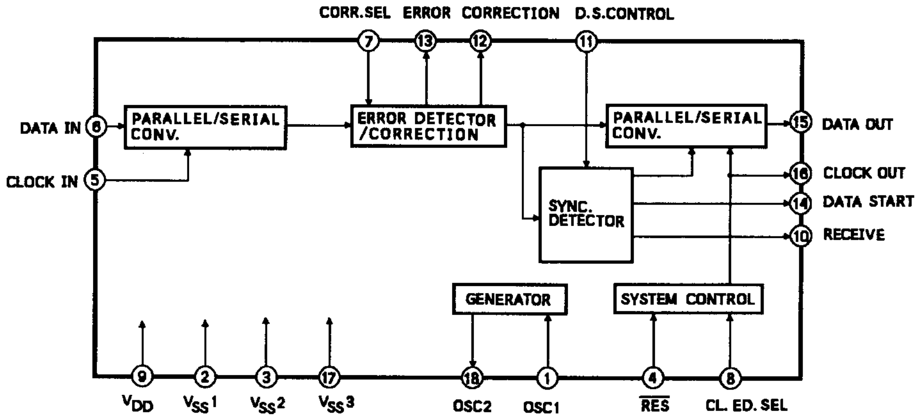
LC7219 : IC004



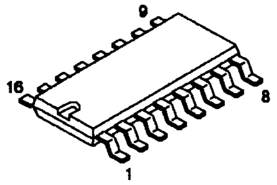

SYC
6
X IN 1
X OUT 24
FM IN 19
AM IN 18
CE 2
DI 3
CL 4
DO 5
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16 , 1/17 4BIT
12BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
21 PD1
22 PD2
16 HCTR
15 LCTR
20 VDD
23 VSS
9 OUT0
10 OUT1
11 OUT2
12 OUT3
13 OUT4
14 OUT5
17 OUT6
7 IN0
8 IN1

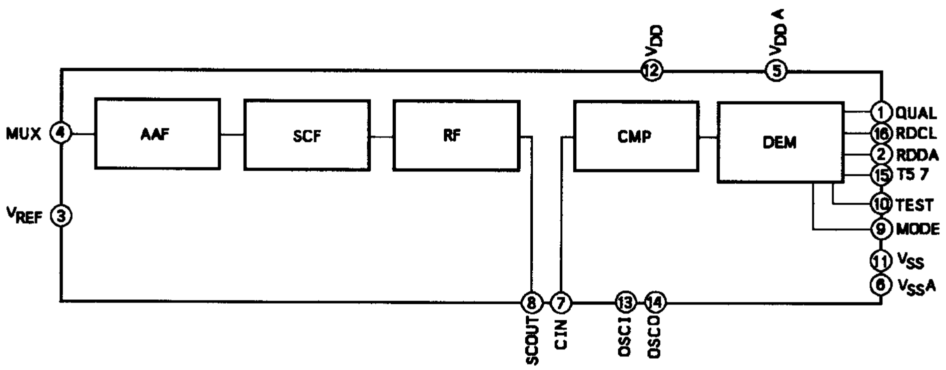
LC7073M : IC005



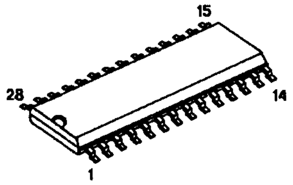

CORR.SEL
ERROR
CORRECTION
D.S.CONTROL
7
13
12
11
DATA IN 6
CLOCK IN 5
PARALLEL/SERIAL CONV.
ERROR DETECTOR /CORRECTION
PARALLEL/SERIAL CONV.
SYNC. DETECTOR
GENERATOR
SYSTEM CONTROL
15 DATA OUT
16 CLOCK OUT
14 DATA START
10 RECEIVE
9 VDD
2 VSS1
3 VSS2
17 VSS3
18 OSC2
1 OSC1
4 RES
8 CL. ED. SEL

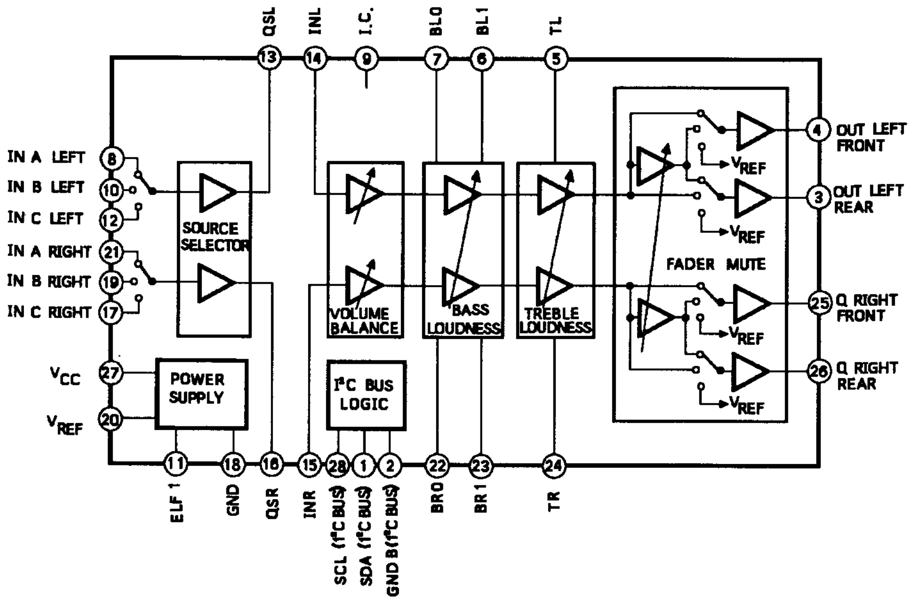
SAA6579T : IC006



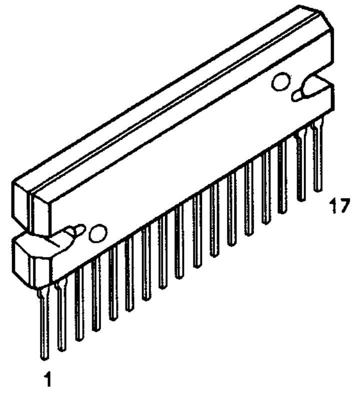

VDD
VDD A
12
5
MUX 4
VREF 3
AAF
SCF
RF
CMP
DEM
1 QUAL
16 RDCL
2 RDDA
15 T5 7
10 TEST
9 MODE
11 VSS
6 VSSA
8 SCOUT
7 CIN
13 OSCI
14 OSCO

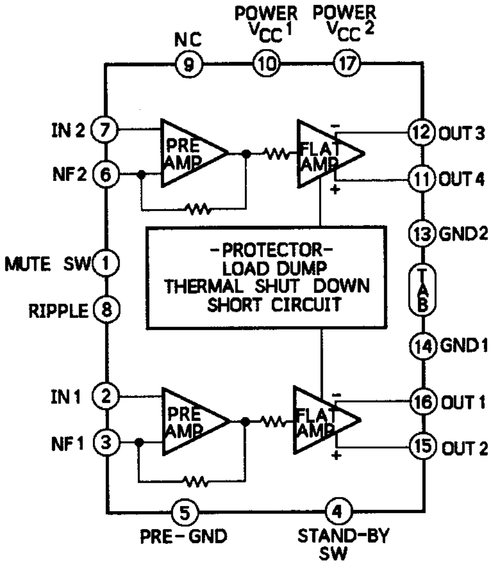
TEA6300T : IC201



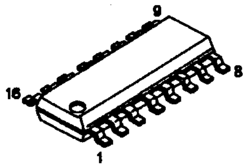

QSL
INL
I.C.
BLO
BL1
TL
13
14
9
7
6
5
IN A LEFT 8
IN B LEFT 10
IN C LEFT 12
IN A RIGHT 21
IN B RIGHT 19
IN C RIGHT 17
VCC 27
VREF 20
SOURCE SELECTOR
POWER SUPPLY
VOLUME BALANCE
I²C BUS LOGIC
BASS LOUDNESS
TREBLE LOUDNESS
FADER MUTE
VREF
4 OUT LEFT FRONT
3 OUT LEFT REAR
25 Q RIGHT FRONT
26 Q RIGHT REAR
11 ELF 1
18 GND
16 QSR
15 INR
28 SCL (I²C BUS)
1 SDA (I²C BUS)
2 GND B(I²C BUS)
22 BRO
23 BR1
24 TR

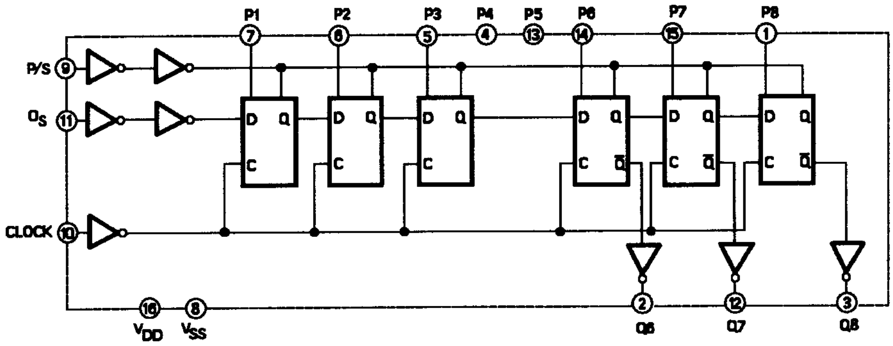
TA8221L : IC301, 302



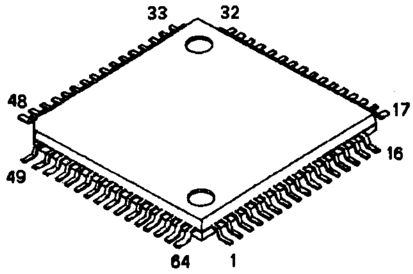

NC
POWER $V_{CC}1$
POWER $V_{CC}2$
9
10
17
IN 2 7
NF2 6
PRE AMP
FLAT AMP
12 OUT 3
11 OUT 4
13 GND2
TAB
14 GND1
-PROTECTOR-
LOAD DUMP
THERMAL SHUT DOWN
SHORT CIRCUIT
MUTE SW 1
RIPPLE 8
IN 1 2
NF 1 3
PRE AMP
FLAT AMP
16 OUT 1
15 OUT 2
5
PRE-GND
4
STAND-BY SW

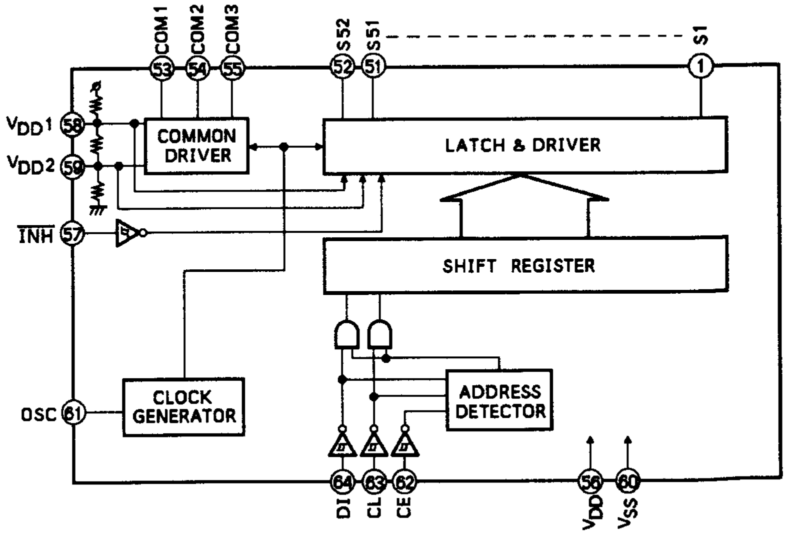
MC14014BFEL : IC401



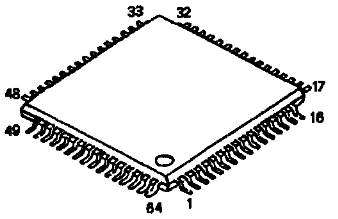

P1 7
P2 6
P3 5
P4 4
P5 13
P6 14
P7 15
P8 1
P/S 9
DS 11
CLOCK 10
D Q
C
VDD 16
VSS 8
Q6 2
Q7 12
Q8 3

LC75850W : IC402


33
32
48
17
49
16
64
1

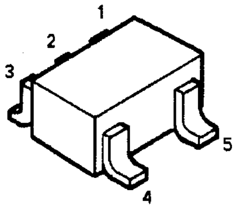

COM1 53
COM2 54
COM3 55
S52 52
S51 51
S1 1
VDD1 58
VDD2 59
INH 57
OSC 61
COMMON DRIVER
LATCH & DRIVER
SHIFT REGISTER
CLOCK GENERATOR
ADDRESS DETECTOR
DI 64
CL 63
CE 62
VDD 56
VSS 60

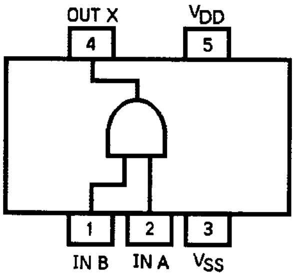
45258W01 : IC501


33
32
17
16
48
49
64
1

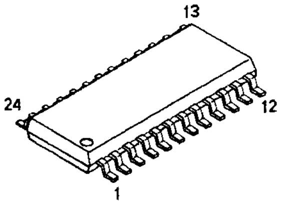
PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O
1	CE1	O	23	AD2	I/O	45	$\overline{\text{SK}}$	I
2	NC	—	24	V_{SS}	—	46	SERCH	I
3	$\overline{\text{DTS MUTE}}$	O	25	AD1	I/O	47	$\overline{\text{MALTI PATH}}$	I
4	$\overline{\text{7071 RESET}}$	O	26	AD0	I/O	48	$\overline{\text{ADJON}}$	I
5	50K REF	O	27	LE	O	49	S·METER	I
6	$\overline{\text{RESET}}$	I	28	DTS STBY	I	50	$\overline{\text{DK}}$	I
7	X2	O	29	RD CL	I	51	$\overline{\text{RDS}}$	I
8	X1	—	30	RD ST	I	52	PLL CLK	O
9	V_{SS}	—	31	DATA	I	53	PLL DO	O
10	SRAM CE2	O	32	DI	I	54	$\overline{\text{LPF SW}}$	O
11	A14	O	33	A. IN	I	55	IF MUTE	O
12	NC	—	34	DTS–START	I	56	PLL CE	—
13	NC	—	35	DTS–CMD	I	57	NC	—
14	NC	—	36	NC	—	58	LW	O
15	A10	O	37	NC	—	59	FM/$\overline{\text{AM}}$	O
16	A9	O	38	DTS–CLK	I	60	L/$\overline{\text{D}}$	O
17	A8	O	39	DTS–STS	O	61	MONO	O
18	AD7	I/O	40	$\overline{\text{EA}}$	I	62	DTS CE	I
19	AD6	I/O	41	V_{DD}	—	63	SD	I
20	AD5	I/O	42	A.V_{SS}	—	64	WR	O
21	AD4	I/O	43	A.V_{REF}	I			
22	AD3	I/O	44	$\overline{\text{ST}}$	I			

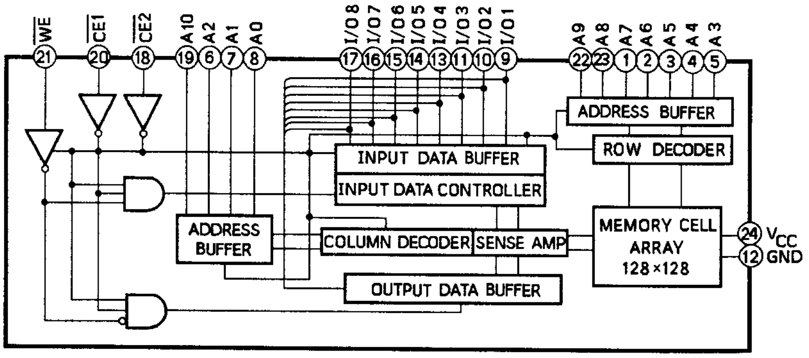
TC4S81F : IC502



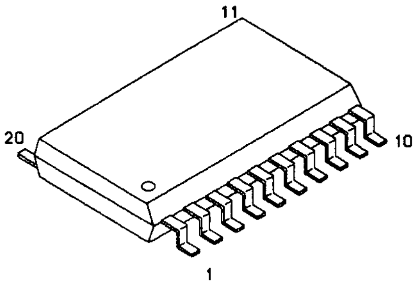

OUT X
VDD
4
5
1
2
3
IN B
IN A
VSS

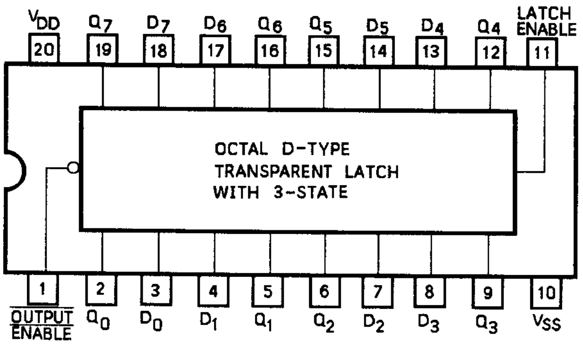
LC3516AML : IC503



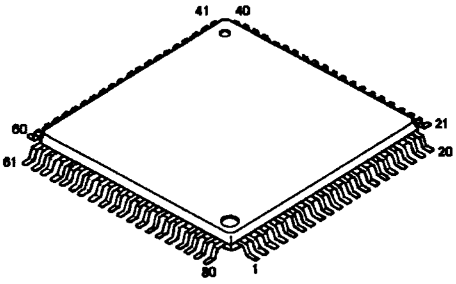

WE
CE1
CE2
A10
A2
A1
A0
I/O8
I/O7
I/O6
I/O5
I/O4
I/O3
I/O2
I/O1
A9
A8
A7
A6
A5
A4
A3
21
20
18
19
6
7
8
17
16
15
14
13
11
10
9
22
23
1
2
3
4
5
ADDRESS BUFFER
ROW DECODER
INPUT DATA BUFFER
INPUT DATA CONTROLLER
ADDRESS BUFFER
COLUMN DECODER
SENSE AMP
MEMORY CELL ARRAY 128×128
OUTPUT DATA BUFFER
24 VCC
12 GND

MC74HC373 : IC504



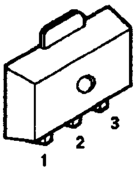

VDD
Q7
D7
D6
Q6
Q5
D5
D4
Q4
LATCH ENABLE
20
19
18
17
16
15
14
13
12
11
OCTAL D-TYPE TRANSPARENT LATCH WITH 3-STATE
1
2
3
4
5
6
7
8
9
10
OUTPUT ENABLE
Q0
D0
D1
Q1
Q2
D2
D3
Q3
VSS

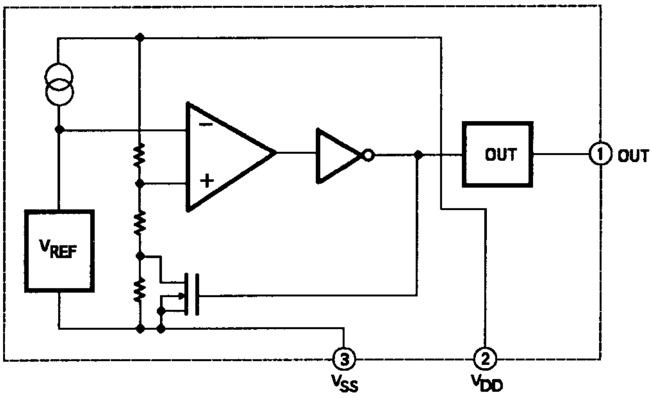
55384W04 : IC601


41
40
60
21
61
20
80
1

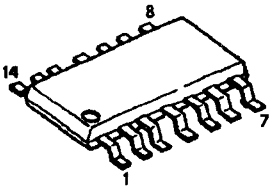
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	PH-D	I	21	PULL-D	—	41	AREA 2	I	61	CCE	O
2	PH-E	I	22	CHNG-D-O	O	42	AREA 1	I	62	LOCK	O
3	GND	—	23	OUT-REM	O	43	GND	—	63	$\overline{\text{LIMIT-SW}}$	I
4	GND	—	24	PULL-D	—	44	GND	—	64	DTS-CE	O
5	X2	—	25	POW-ON	O	45	GND	I	65	DTS-CLK	O
6	X1	—	26	A-MUTE	O	46	$\overline{\text{CAM-END}}$	I	66	DTS-STS	I
7	GND	—	27	PULL-D	—	47	LOAD-FWD	O	67	DTS-CMD	O
8	OSC1	—	28	ALM ON	O	48	LOAD-BWD	O	68	LCD-CLK	O
9	OSC2	—	29	PULL-D	—	49	SOLNOID	O	69	LCD-CE	O
10	$\overline{\text{RESET}}$	I	30	VOL-CLK	O	50	PULL-D	—	70	LCD-DATA	O
11	A-HOLD	I	31	VOL-DATA	O	51	PULL-D	—	71	LCD-INH	O
12	B-HOLD	I	32	PULL-D	—	52	F-CONT	O	72	DTS-STAT	O
13	CHNG-D-1	I	33	NOSE-POW	O	53	L-CONT	O	73	$\overline{\text{DTS-STBY}}$	O
14	$\overline{\text{IN PAUSE}}$	I	34	POW-IC	O	54	V-CONT	O	74	AV_{CC}	—
15	$\overline{\text{IN INT}}$	I	35	LCD-ON	O	55	5V	—	75	T-SENSE	I
16	TP-ALM	O	36	AMB/$\overline{\text{GRN}}$	O	56	BUS0	I/O	76	NOSE	I
17	PULL-D	—	37	KEY-P/S	O	57	BUS1	I/O	77	DTS-MUTE	I
18	PULL-D	—	38	PULL-D	—	58	BUS2	I/O	78	PH-A	I
19	PULL-D	—	39	KEY-I/N	I	59	BUS3	I/O	79	PH-B	I
20	PULL-D	—	40	AREA 3	I	60	BUCK	O	80	PH-C	I

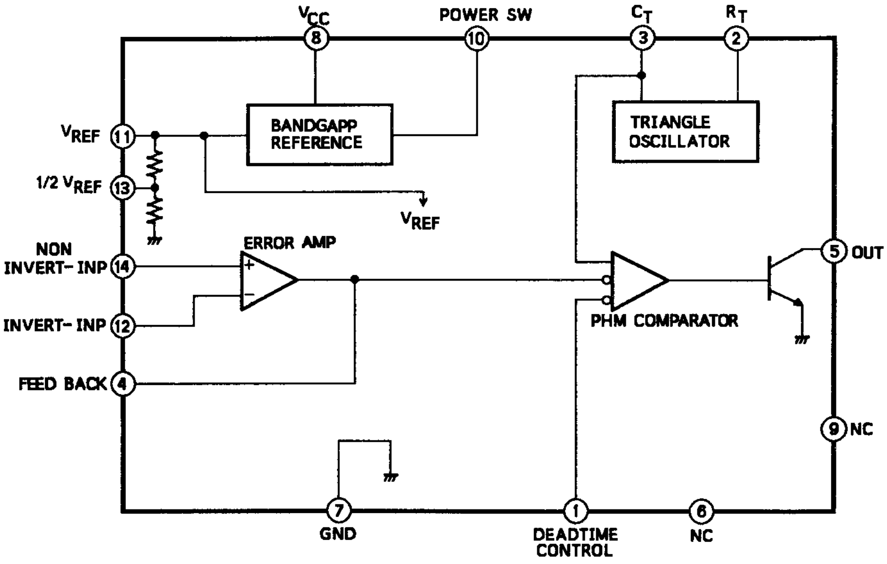
S-8052HNM-CR : IC602
S-8054ALB-LM : IC801



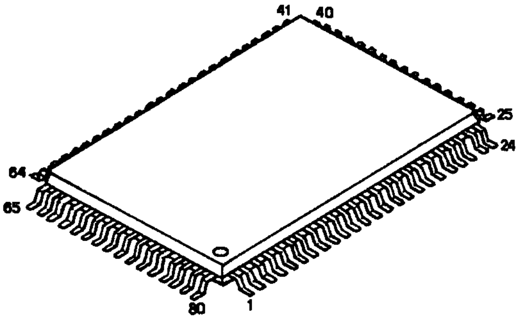

−
+
V_{REF}
OUT
① OUT
③ V_{SS}
② V_{DD}

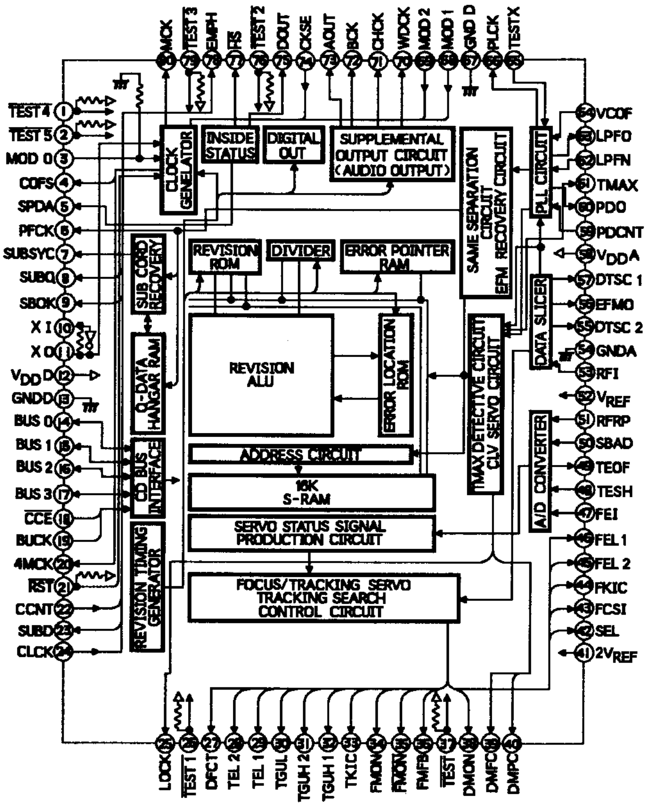
BA9700AF : IC701



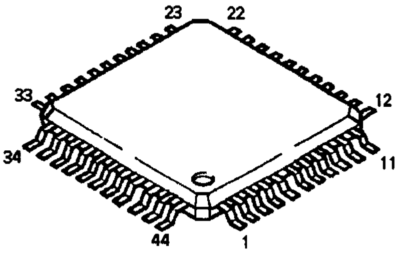

V_{CC} ⑧
POWER SW ⑩
C_T ③
R_T ②
V_{REF} ⑪
1/2 V_{REF} ⑬
BANDGAPP REFERENCE
TRIANGLE OSCILLATOR
V_{REF}
ERROR AMP
NON INVERT-INP ⑭
INVERT-INP ⑫
FEED BACK ④
PHM COMPARATOR
⑤ OUT
⑨ NC
⑦ GND
① DEADTIME CONTROL
⑥ NC

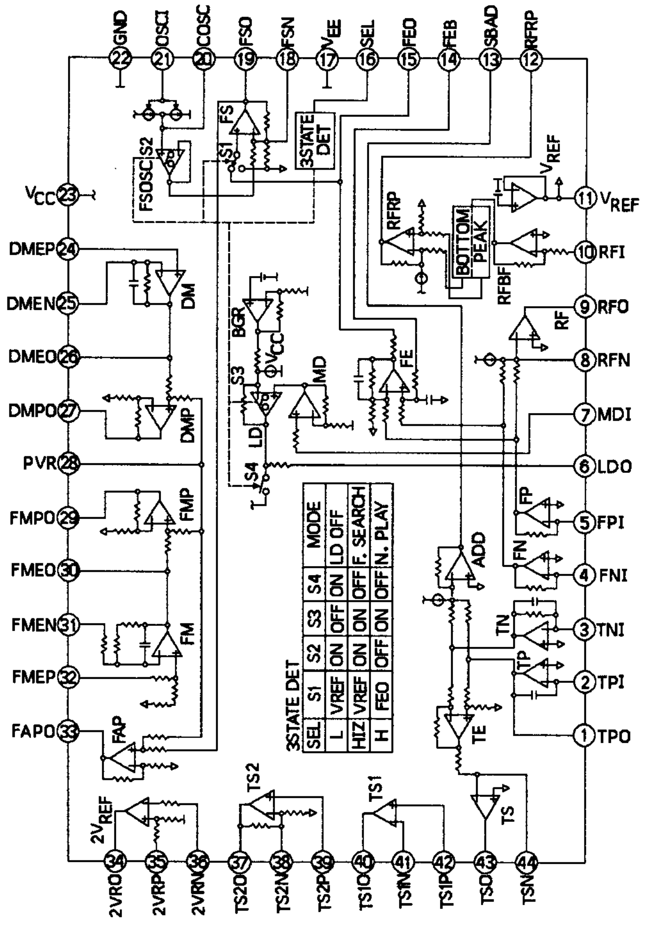
TC9236AF : IC1101 (DP24H01B)


41
40
25
24
64
65
80
1


TEST 4 ①
TEST 5 ②
MOD 0 ③
COFS ④
SPDA ⑤
PFCK ⑥
SUBSYC ⑦
SUBQ ⑧
SBOK ⑨
X I ⑩
X O ⑪
VDD D ⑫
GNDD ⑬
BUS 0 ⑭
BUS 1 ⑮
BUS 2 ⑯
BUS 3 ⑰
CCE ⑱
BUCK ⑲
4MCK ⑳
RST ㉑
CCNT ㉒
SUBD ㉓
CLCK ㉔
LOCK ㉕
TEST 1 ㉖
DFCT ㉗
TEL 2 ㉘
TEL 1 ㉙
TGUL ㉚
TGUH 2 ㉛
TGUH 1 ㉜
TKIC ㉝
FMON ㉞
FMON ㉟
FMFB ㊱
TEST ㊲
DMON ㊳
DMFC ㊴
DMPC ㊵
㊶ 2VREF
㊷ SEL
㊸ FCSI
㊹ FKIC
㊺ FEL 2
㊻ FEL 1
㊼ FEI
㊽ TESH
㊾ TEOF
㊿ SBAD
(51) RFRP
(52) VREF
(53) RFI
(54) GNDA
(55) DTSC 2
(56) EFMO
(57) DTSC 1
(58) VDDA
(59) PDCNT
(60) PDO
(61) TMAX
(62) LPFN
(63) LPFO
(64) VCOF
(65) TESTX
(66) PLCK
(67) GND D
(68) MOD 1
(69) MOD 2
(70) WDCK
(71) CHCK
(72) BCK
(73) AOUT
(74) CKSE
(75) DOUT
(76) TEST 2
(77) FS
(78) EMPH
(79) TEST 3
(80) MCK
CLOCK GENELATOR
INSIDE STATUS
DIGITAL OUT
SUPPLEMENTAL OUTPUT CIRCUIT (AUDIO OUTPUT)
SAME SEPARATION CIRCUIT EFM RECOVERY CIRCUIT
PLL CIRCUIT
SUB CORD RECOVERY
REVISION ROM
DIVIDER
ERROR POINTER RAM
DATA SLICER
Q-DATA HANGAR RAM
REVISION ALU
ERROR LOCATION ROM
TMAX DETECTIVE CIRCUIT CLV SERVO CIRCUIT
A/D CONVERTER
CD BUS INTERFACE
ADDRESS CIRCUIT
16K S-RAM
SERVO STATUS SIGNAL PRODUCTION CIRCUIT
REVISION TIMING GENERATOR
FOCUS/TRACKING SERVO TRACKING SEARCH CONTROL CIRCUIT

TA8191F : IC1102 (DP24H01B)

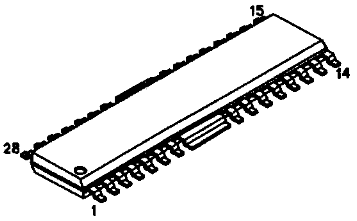

23
22
33
12
34
11
44
1

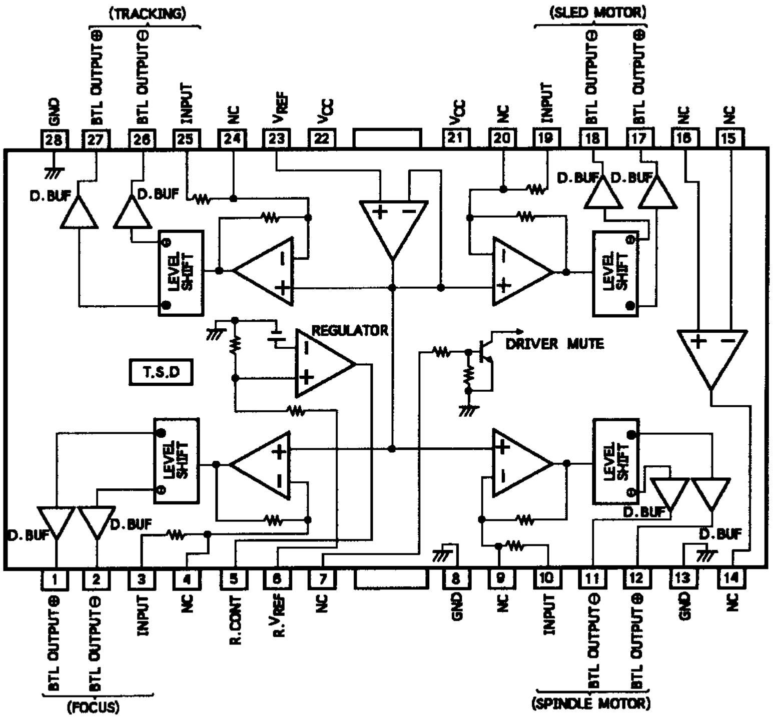

GND ㉒
OSCI ㉑
COSC ⑳
FSO ⑲
FSN ⑱
VEE ⑰
SEL ⑯
FEO ⑮
FEB ⑭
SBAD ⑬
RFRP ⑫
VCC ㉓
DMEP ㉔
DMEN ㉕
DMEO ㉖
DMPO ㉗
PVR ㉘
FMPO ㉙
FMEO ㉚
FMEN ㉛
FMEP ㉜
FAPO ㉝
⑪ VREF
⑩ RFI
⑨ RFO
⑧ RFN
⑦ MDI
⑥ LDO
⑤ FPI
④ FNI
③ TNI
② TPI
① TPO
㉞ 2VRO
㉟ 2VRP
㊱ 2VRN
㊲ TS2O
㊳ TS2N
㊴ TS2P
㊵ TS1O
㊶ TS1N
㊷ TS1P
㊸ TSO
㊹ TSN
FSOSC
S2
S1
FS
3STATE DET
RFRP
BOTTOM
PEAK
RFBF
VREF
RF
DM
BGR
VCC
S3
LD
MD
FE
DMP
S4
FMP
FM
FAP
FP
FN
ADD
TN
TP
TE
2VREF
TS2
TS1
TS

3STATE DET

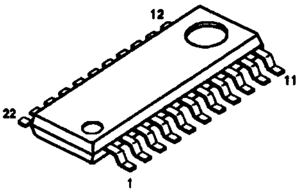
SEL	S1	S2	S3	S4	MODE
L	VREF	ON	OFF	ON	LD OFF
HIZ	VREF	ON	ON	OFF	F. SEARCH
H	FEO	OFF	ON	OFF	N. PLAY

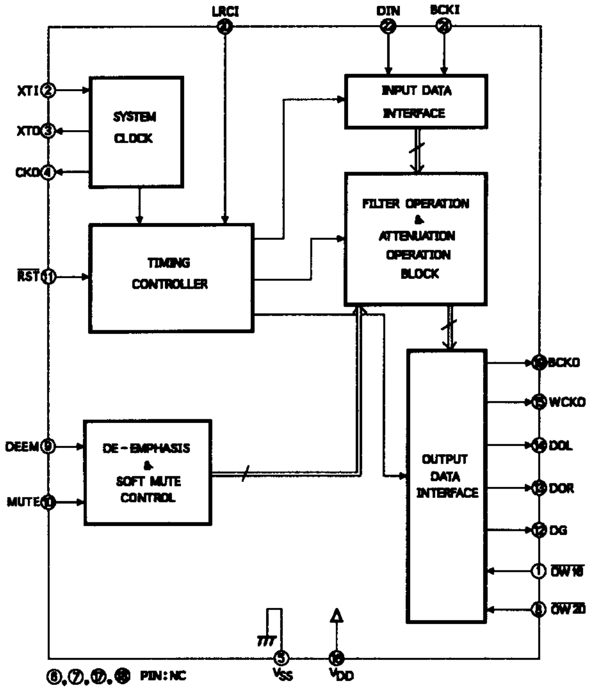
BA6298FP : IC1103 (DP24H01B)



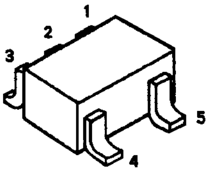

(TRACKING)
(SLED MOTOR)
GND
BTL OUTPUT⊕
BTL OUTPUT⊖
INPUT
NC
VREF
VCC
VCC
NC
INPUT
BTL OUTPUT⊖
BTL OUTPUT⊕
NC
NC
28
27
26
25
24
23
22
21
20
19
18
17
16
15
D.BUF
D.BUF
D.BUF
D.BUF
LEVEL SHIFT
LEVEL SHIFT
REGULATOR
DRIVER MUTE
T.S.D
LEVEL SHIFT
LEVEL SHIFT
D.BUF
D.BUF
D.BUF
D.BUF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
BTL OUTPUT⊕
BTL OUTPUT⊖
INPUT
NC
R.CONT
R.VREF
NC
GND
NC
INPUT
BTL OUTPUT⊖
BTL OUTPUT⊕
GND
NC
(FOCUS)
(SPINDLE MOTOR)

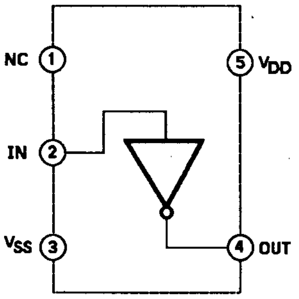
SM5840CS : IC1106 (DP24H01B)



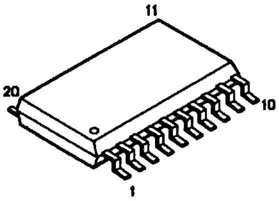

LRCI
DIN
BCKI
XTI
XTO
CKO
RST
SYSTEM CLOCK
TIMING CONTROLLER
INPUT DATA INTERFACE
FILTER OPERATION & ATTENUATION OPERATION BLOCK
OUTPUT DATA INTERFACE
BCKO
WCKO
DOL
DOR
DG
OW18
OW20
DEEM
MUTE
DE-EMPHASIS & SOFT MUTE CONTROL
⑥,⑦,⑰,⑱ PIN:NC
VSS
VDD

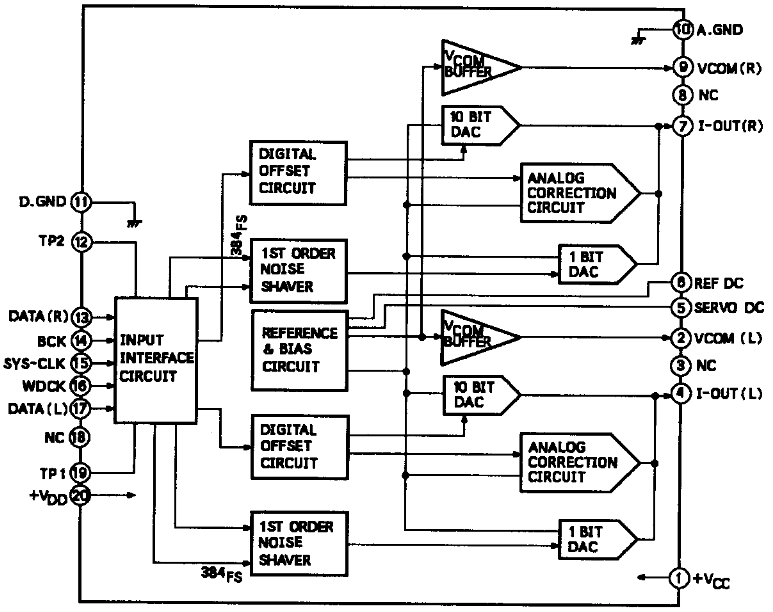
TC7SU04F : IC1109 (DP24H01B)



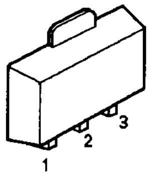

NC ①
IN ②
VSS ③
⑤ VDD
④ OUT

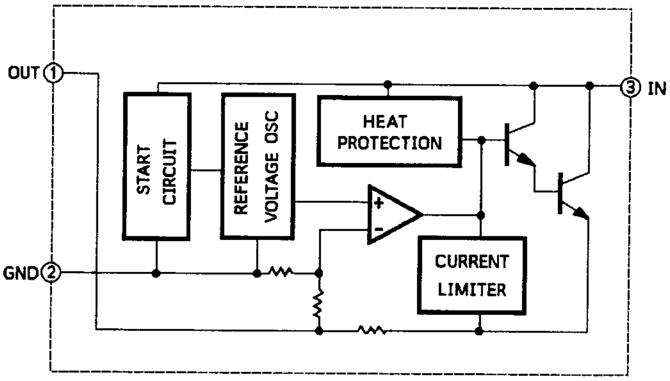
PCM67U : IC1202 (DP24H01B)



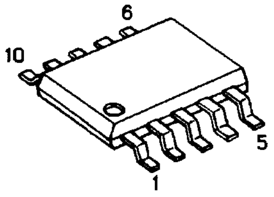

⑩ A.GND
⑨ VCOM(R)
⑧ NC
⑦ I-OUT(R)
⑥ REF DC
⑤ SERVO DC
② VCOM (L)
③ NC
④ I-OUT(L)
① +V_{CC}
D.GND ⑪
TP2 ⑫
DATA(R) ⑬
BCK ⑭
SYS-CLK ⑮
WDCK ⑯
DATA(L) ⑰
NC ⑱
TP1 ⑲
+V_{DD} ⑳
INPUT INTERFACE CIRCUIT
DIGITAL OFFSET CIRCUIT
1ST ORDER NOISE SHAVER
REFERENCE & BIAS CIRCUIT
DIGITAL OFFSET CIRCUIT
1ST ORDER NOISE SHAVER
V_{COM} BUFFER
10 BIT DAC
ANALOG CORRECTION CIRCUIT
1 BIT DAC
V_{COM} BUFFER
10 BIT DAC
ANALOG CORRECTION CIRCUIT
1 BIT DAC
384FS
384FS

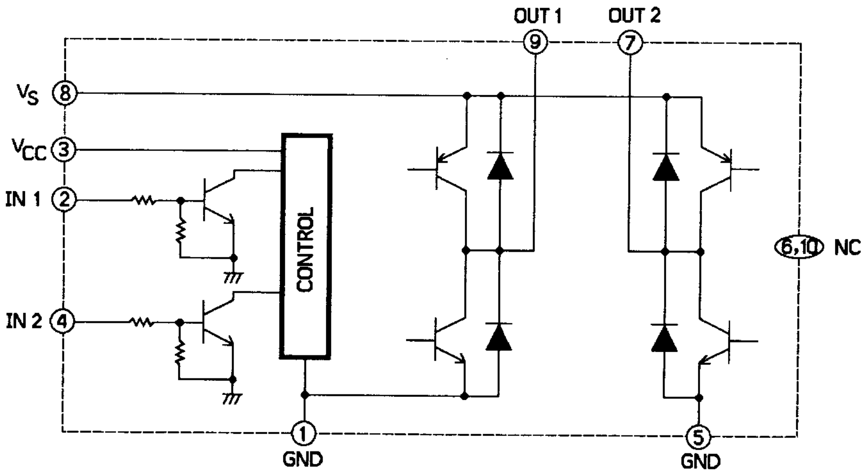
NJM78L05UA : IC1210 (DP24H01B)




OUT ①
GND ②
③ IN
START CIRCUIT
REFERENCE VOLTAGE OSC
HEAT PROTECTION
CURRENT LIMITER
+
−

LB1638M : IC1507 (DP24H01B)



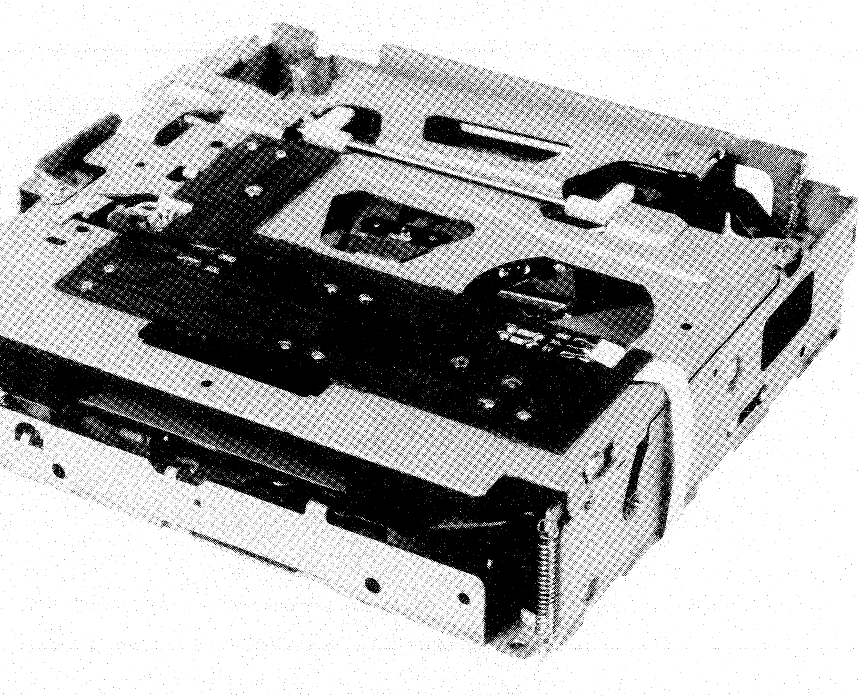

OUT 1
OUT 2
⑨
⑦
V_S ⑧
V_{CC} ③
IN 1 ②
IN 2 ④
CONTROL
⑥,⑩ NC
① GND
⑤ GND

1102810713

ALPINE®

SERVICE MANUAL

CD Player Mechanism



DP-H SERIES

Contents

Mechanism Operation .... 3 to 19
Timing Chart .... 20 to 24
Component disassembly and assembly notes .... 25 to 29
Schematic Diagram .... 31 to 33
Exploded View (CD Mechanism) .... 34 to 35
CD Mechanism Assembly Parts List 36

Mechanism Operation

<DP24H010 three side diagrams>

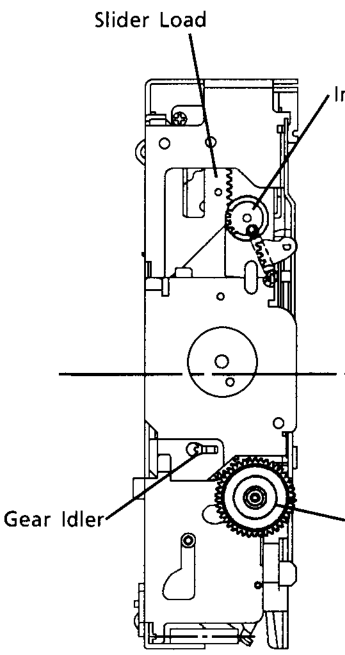

Slider Load
Inversion Gear
Gear Idler

Figure 1

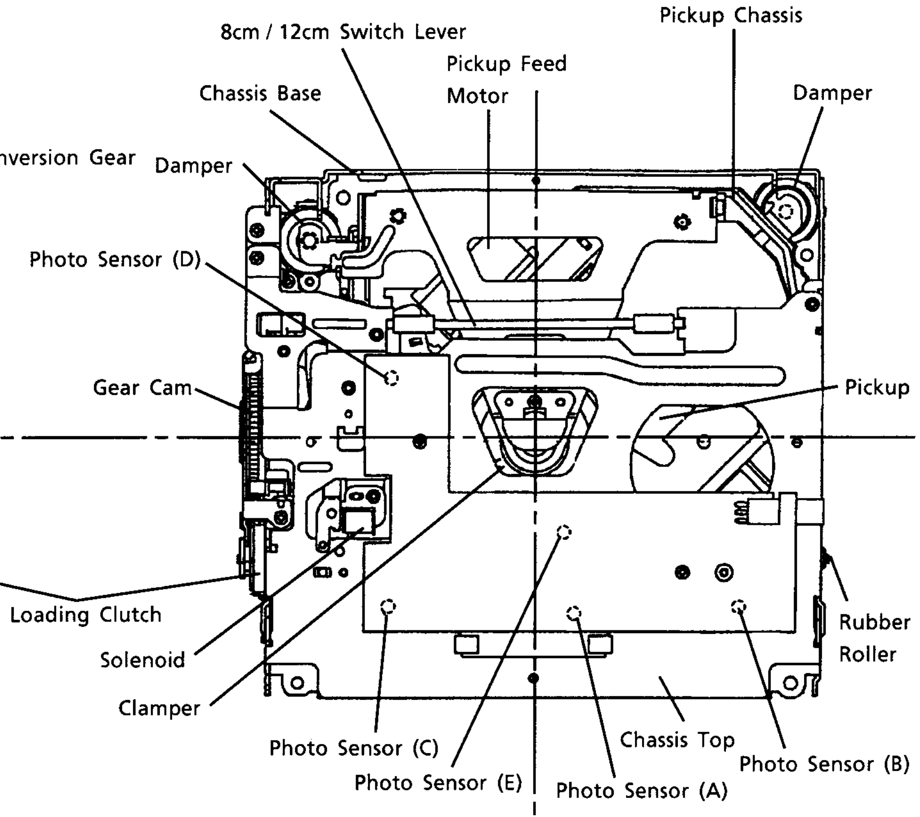

8cm / 12cm Switch Lever
Pickup Chassis
Pickup Feed
Motor
Chassis Base
Damper
Damper
Photo Sensor (D)
Gear Cam
Pickup
Loading Clutch
Solenoid
Clamper
Rubber
Roller
Photo Sensor (C)
Photo Sensor (E)
Chassis Top
Photo Sensor (A)
Photo Sensor (B)

Figure 2

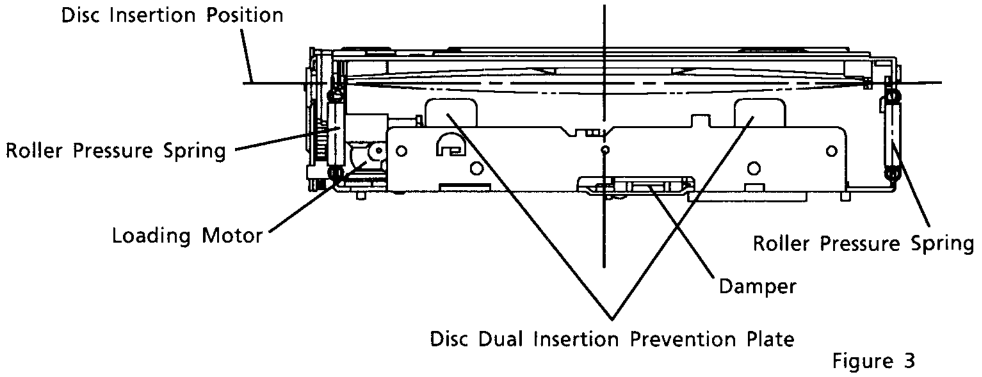

Disc Insertion Position
Roller Pressure Spring
Loading Motor
Roller Pressure Spring
Damper
Disc Dual Insertion Prevention Plate

Figure 3

<DP24H010 Photo Sensor location diagram>

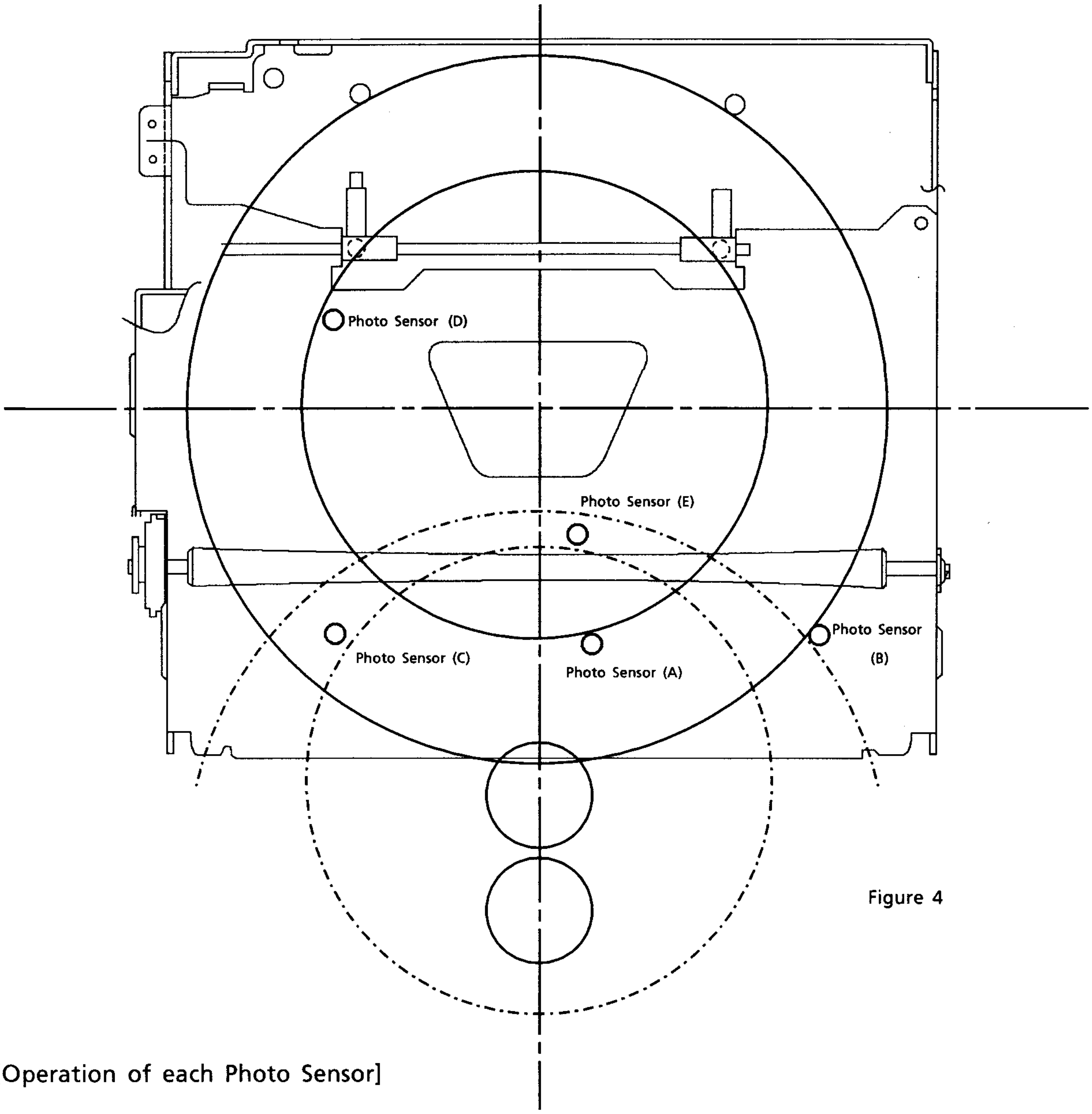


Figure 4

[Operation of each Photo Sensor]

1. Photo Sensor (A) .... ① Detects insertion of a 8cm Disc or 12cm Disc.
   ② Detects Loading end position of the 8cm Disc.
2. Photo Sensor (B) .... ① Identifies either 8cm Disc or 12cm Disc by working with the Photo Sensor (C).
   ② Detects Loading end position of the 12cm Disc.
   ③ Detects eject position of the 12cm Disc.
   ④ Detects a reloading of the 12cm Disc.
3. Photo Sensor (C) .... ① Detects insertion of the 8cm Disc.
   ② Detects eject position of the 8cm Disc.
   ③ Identifies either 8cm Disc or 12cm Disc by working with the Photo Sensor (B).
4. Photo Sensor (D) .... ① Detects loading end of the 8cm Disc.
   ② Detects that the 12cm Disc reaches the position at which it touches the stopper pin.
5. Photo Sensor (E) .... ① Detects reloading of the 8cm Disc.

Function	Sequence	Operation	Illustration
12cm Disc pull-in operation	①	When the disc reaches position ①, the Photo Sensor (A) is interrupted and the disc insertion is detected. The Loading Motor runs in forward direction. As the disc moves further, it is pulled in by the Rubber Roller.	Figure 5
	②	When the disc reaches position ②, both the Photo Sensors (B) and (C) are interrupted at the same time, thereby identifying the disc is of 12cm type. The Lock Lever is opened.	
	③	When the disc reaches position ③, it touches top of the Switch Lever and the pin is raised by driving force of the Rubber Roller.	
	④	When the disc reaches position ④ an outer edge of the disc touches the pin which determines the 12cm Disc position and the disc position is set to the chucking center.	
	⑤	It is detected that the disc position has been determined with the Photo Sensor (B) uninterrupted. Then the Solenoid is powered.	

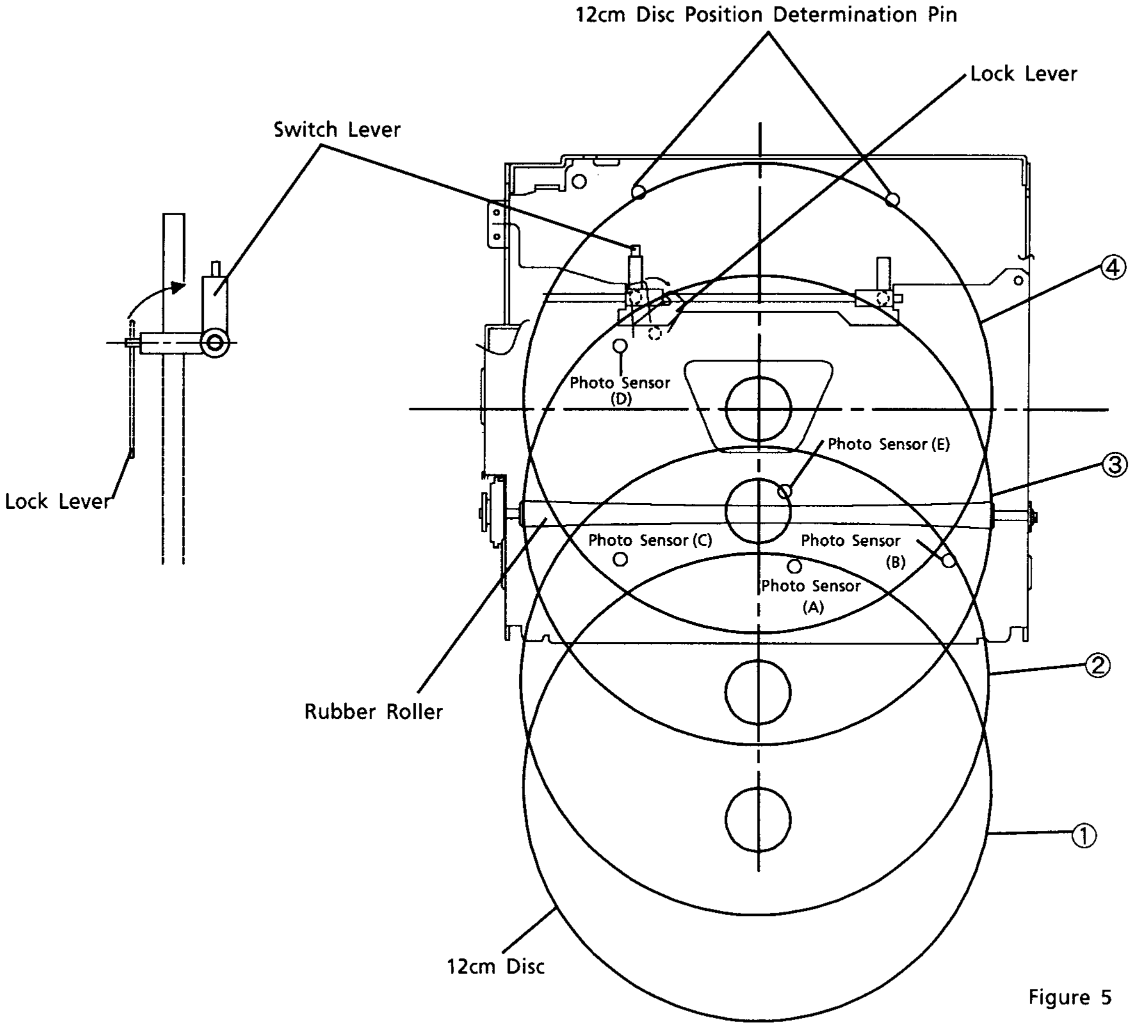

12cm Disc Position Determination Pin
Lock Lever
Switch Lever
④
Photo Sensor (D)
Photo Sensor (E)
③
Lock Lever
Photo Sensor (C)
Photo Sensor (B)
Photo Sensor (A)
②
Rubber Roller
①
12cm Disc

Figure 5

Function	Sequence	Operation	Illustration
8cm Disc pull-in operation	①	When the disc reaches position ①, the Photo Sensor (A) is interrupted and the Loading Motor rotates in forward direction, thereby the disc is pulled in by the Rubber Roller.	Figure 6
	②	Since distance between the Photo Sensors (B) and (C) is larger than the diameter of an 8cm Disc, both of the Photo Sensors (B) and (C) can not be interrupted at the same time when the 8cm Disc is inserted at either left or right side. Accordingly, the Lock Lever does not open until the disc reaches position ②, thus the position is determined directly.	
	③	With the Photo Sensor (D) interrupted and the Photo Sensor (A) uninterrupted, determination of the disc position is detected and the Solenoid is powered.	
	④	After completion of the chucking operation, the Lock Lever is opened and the Switch Lever is moved upward by 90 degrees by a force of Inversion Spring.	

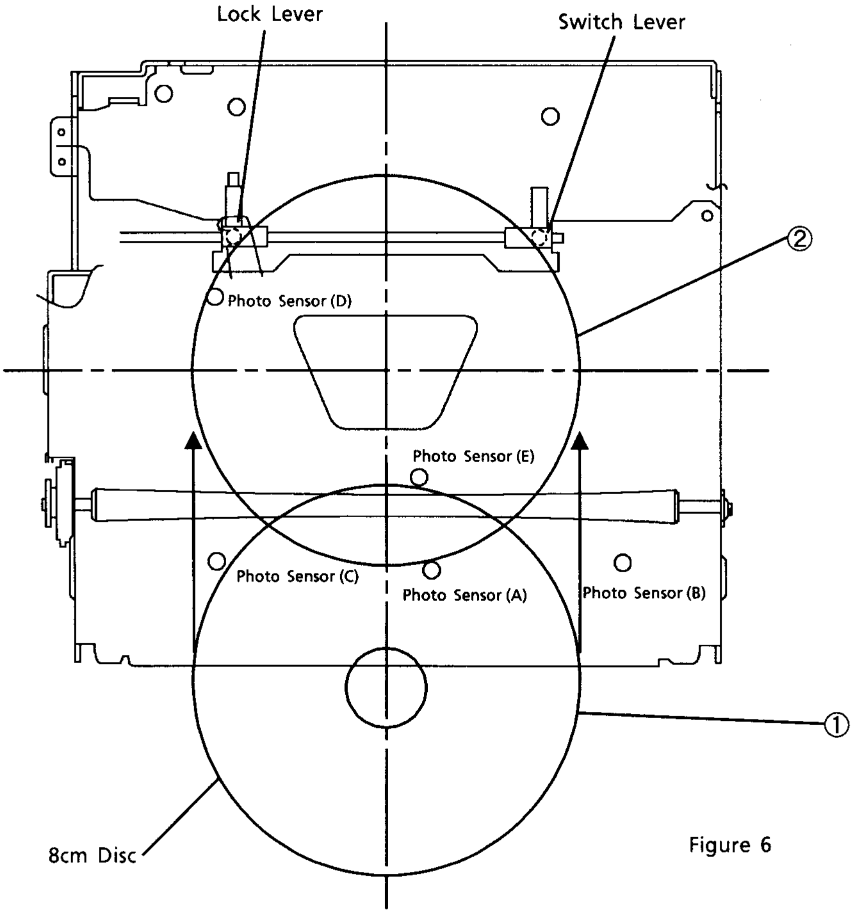

Lock Lever
Switch Lever
②
Photo Sensor (D)
Photo Sensor (E)
Photo Sensor (C)
Photo Sensor (A)
Photo Sensor (B)
①
8cm Disc

Figure 6

Function	Sequence	Operation	Illustration
Roller drive system operation	①	Loading Motor rotates.	Figure 7
	②	Worm gear of the Motor Shaft rotates and Worm Wheel transfers driving force to the Idler Gear.	
	③	Idler Gear (big) transfers the driving force to the Loading Clutch.	
	④	The Loading Clutch limits the driving torque within 45gcm~85gcm and transfers it to the Rubber Roller.	
	⑤	The Rubber Roller rotates, thereby pulling in the disc.	

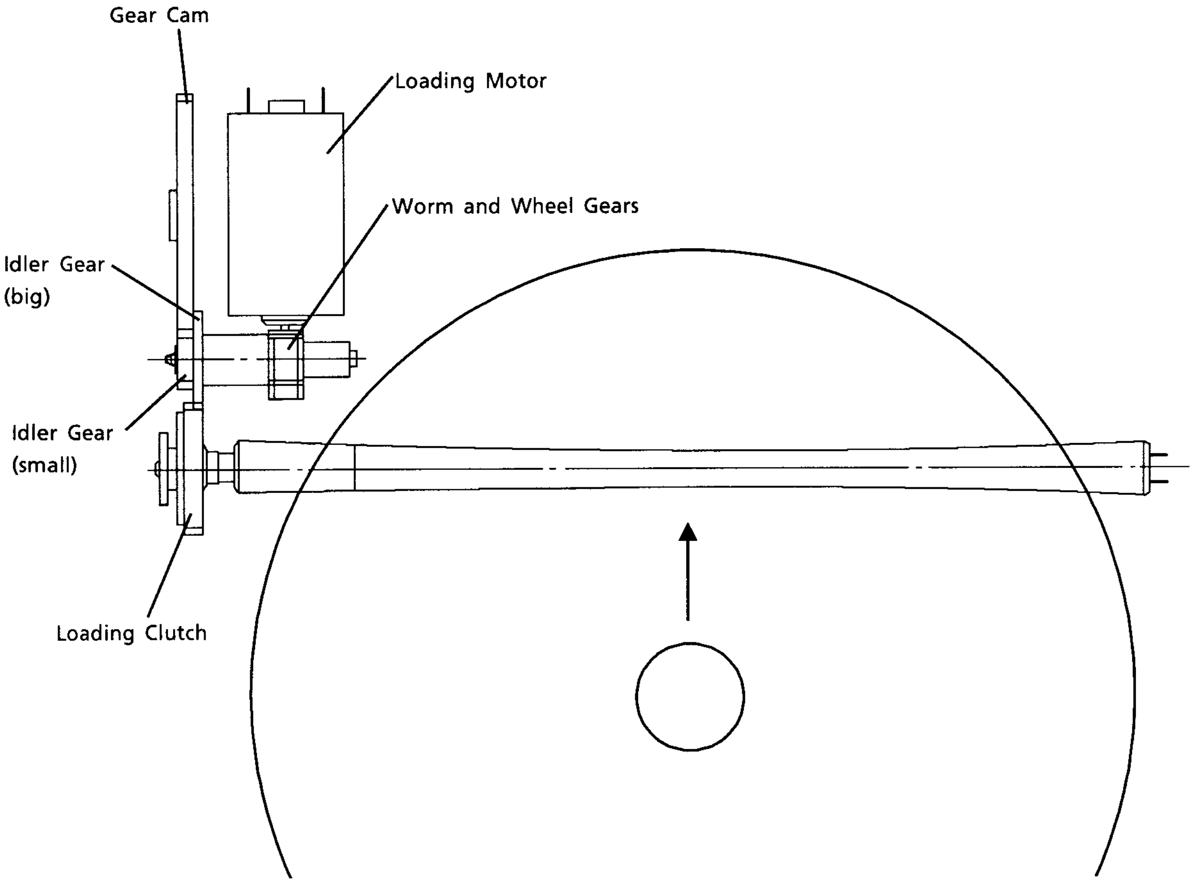
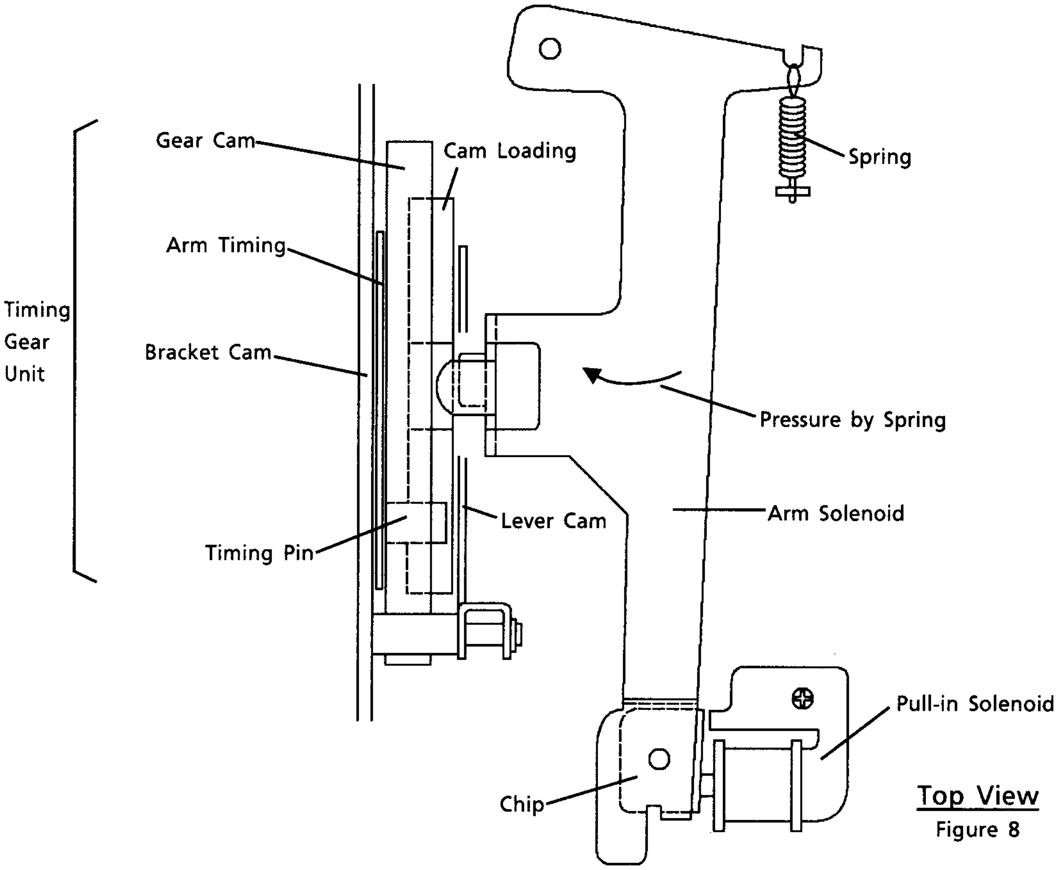
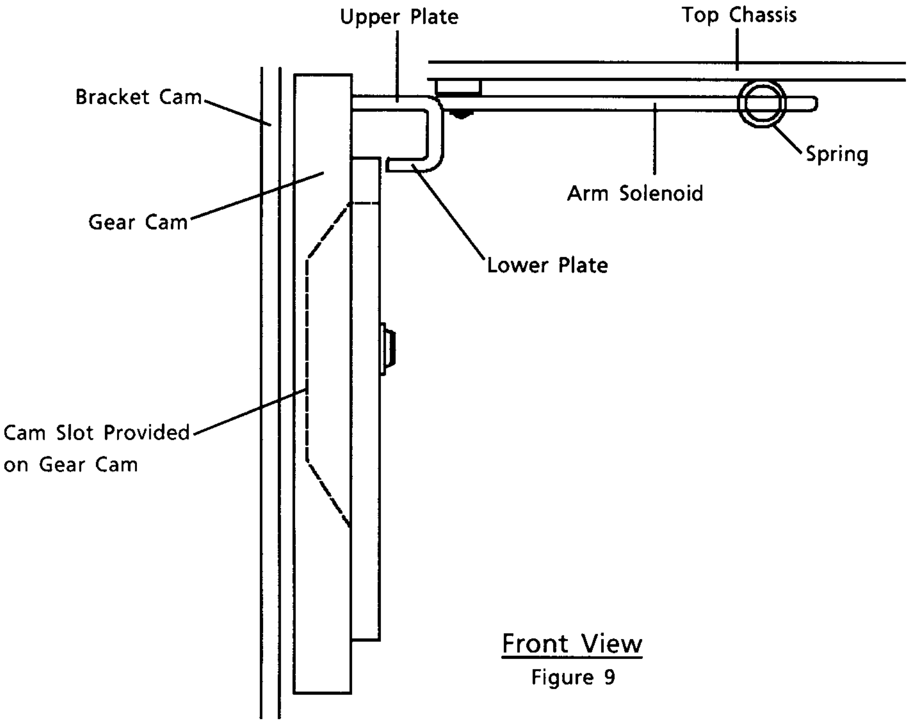

Gear Cam
Loading Motor
Worm and Wheel Gears
Idler Gear (big)
Idler Gear (small)
Loading Clutch

Figure 7

<Structures around Loading Gears>


Gear Cam
Cam Loading
Spring
Arm Timing
Timing
Gear
Unit
Bracket Cam
Pressure by Spring
Arm Solenoid
Lever Cam
Timing Pin
Pull-in Solenoid
Chip

Top View
Figure 8


Upper Plate
Top Chassis
Bracket Cam
Spring
Arm Solenoid
Gear Cam
Lower Plate
Cam Slot Provided
on Gear Cam

Front View
Figure 9

Function	Sequence	Operation	Illustration
Operations of Timing Gear unit in disc pull-in (Solenoid not powered) operation	①	The Gear Cam rotates in clockwise direction and the Timing Pin comes near the coupling Slot of the Gear Cam.	Figure 10
	②	The Timing Cam is going to enter the Coupling Slot but it is interrupted by a Lower Plate of the Arm Solenoid entered left side along the Cam Slot, so it passes away upper side.	Figure 11
	③	When the Timing Pin passes away the Coupling Slot, the Arm Solenoid is pressed and returned to right side as the Cam Slot does not exist. The Chip and Solenoid touch at this position.	Figure 12

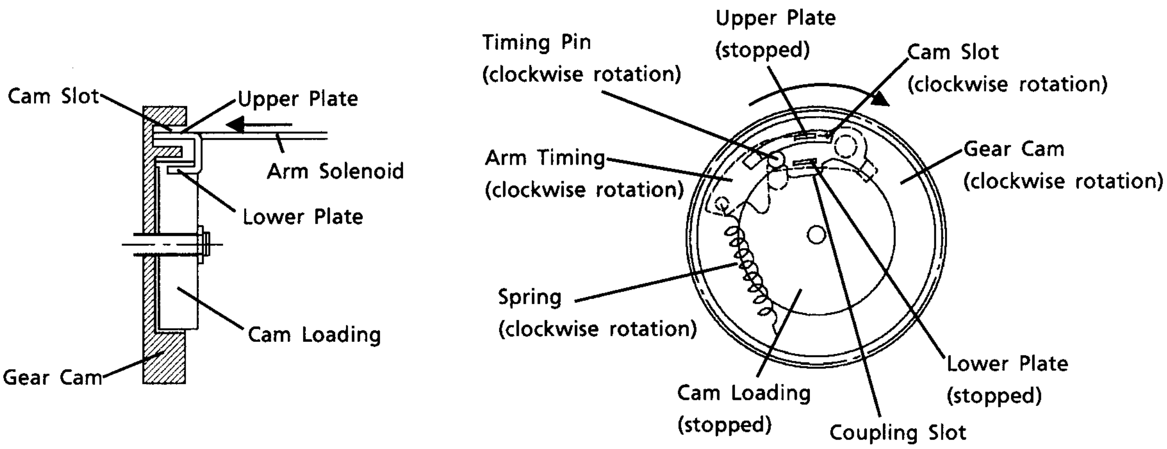

Cam Slot
Upper Plate
Arm Solenoid
Lower Plate
Cam Loading
Gear Cam
Timing Pin
(clockwise rotation)
Upper Plate
(stopped)
Cam Slot
(clockwise rotation)
Arm Timing
(clockwise rotation)
Gear Cam
(clockwise rotation)
Spring
(clockwise rotation)
Lower Plate
(stopped)
Cam Loading
(stopped)
Coupling Slot

Figure 10

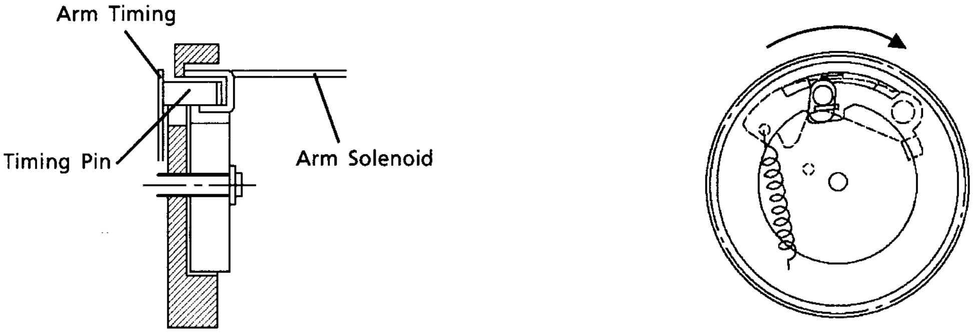

Arm Timing
Timing Pin
Arm Solenoid

Figure 11

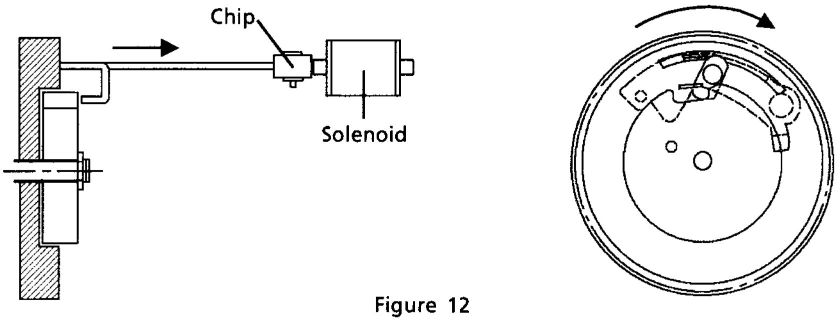

Chip
Solenoid

Figure 12

Function	Sequence	Operation	Illustration
Operations of Timing Gear unit in disc chucking (Solenoid powered)	①	The Gear Cam rotates clockwise and the Timing Pin comes near the Coupling Slot. But the Arm Solenoid does not move to left side as the Solenoid is attracting if the Cam Slot moves to the Upper Plate position.	Figure 13
	②	As the arm Solenoid does not move to left side, the Timing Pin is dropped into the Coupling Slot by a force of the Spring without it is interrupted by the Lower Plate.	Figure 14
	③	When the Timing Pin enters the Coupling Slot completely, both the Gear Cam and the Cam Loading start rotation clockwise, thus the chucking operation starts.	Figure 15

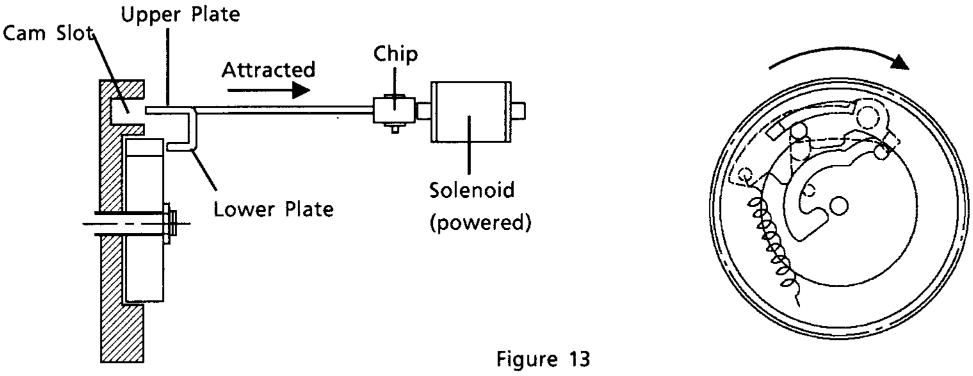

Cam Slot
Upper Plate
Attracted
Chip
Lower Plate
Solenoid
(powered)

Figure 13

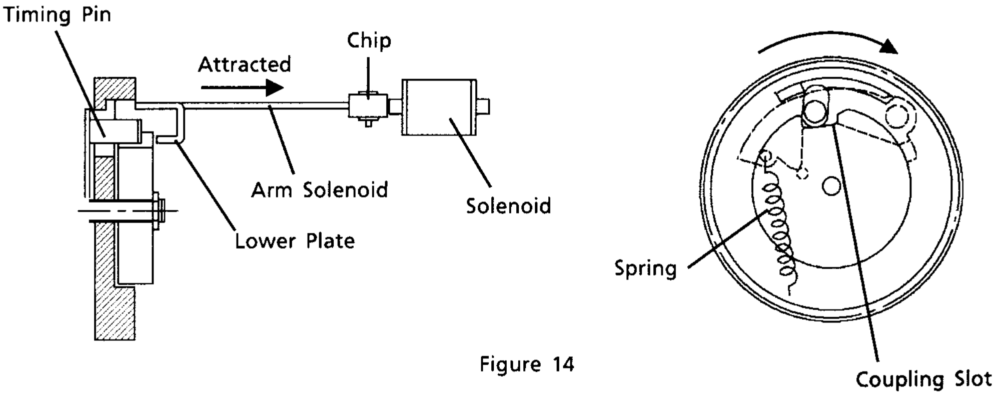

Timing Pin
Attracted
Chip
Arm Solenoid
Solenoid
Lower Plate
Spring
Coupling Slot

Figure 14

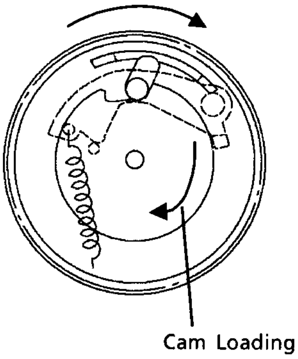

Cam Loading

Figure 15

Function	Sequence	Operation	Illustration
Coupling release operation of the Gear Cam and Cam Loading in chucking operations	①	The Gear Cam and the Cam Loading are coupled with the Timing Pin and they begin to rotate clockwise as a unit.	Figure 16
	②	When they rotate by 320 degrees, the chucking operating completes.	Figure 17
	③	The Remove Pin and the Arm Timing Pin touch at this position and the Arm Timing is raised.	Figure 18
	④	When the Timing Pin is disengaged from the Coupling Slot, only the Gear Cam rotates idly.	Figure 19

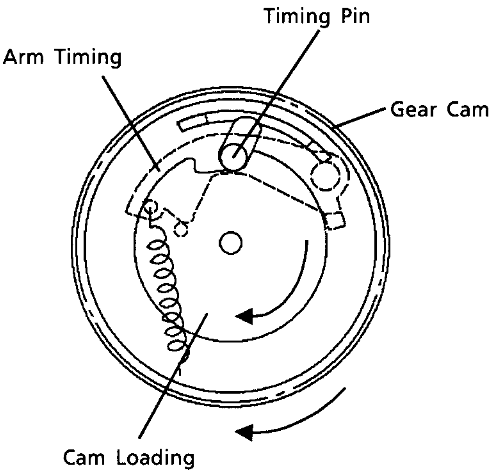

Timing Pin
Arm Timing
Gear Cam
Cam Loading

Figure 16

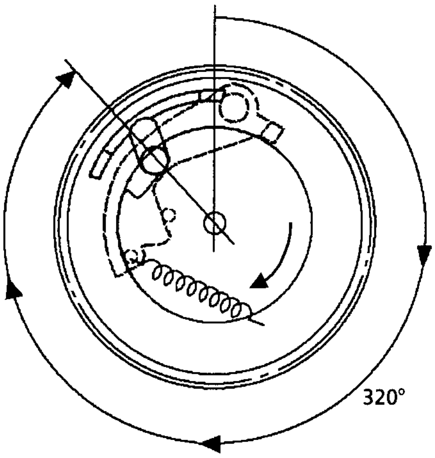


Figure 17

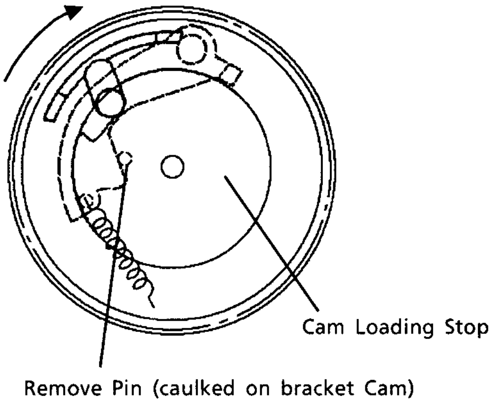

Cam Loading Stop
Remove Pin (caulked on bracket Cam)

Figure 18

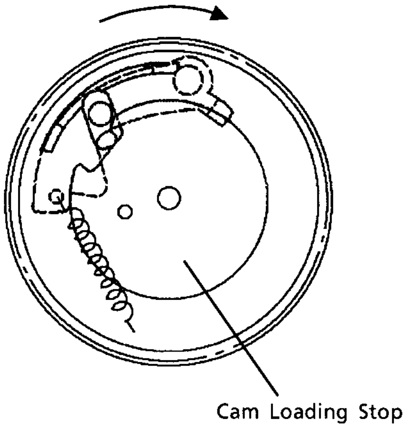

Cam Loading Stop

Figure 19

Function	Sequence	Operation	Illustration
Slide feed operation by rotation of Cam Loading in chucking operation	①	Chucking operation start position / the Cam Loading is stopped when the Pin caulked on the Lever Cam drops onto a recessed section of the Cam Slot.	Figure 20
	②	The Pin rises on a protruded section as the Cam Loading rotates clockwise.	Figure 21
	③	The Pin passes over the protruded section and enters the Cam Slot.	Figure 22
	④	The Lever Link is rotated by the slanted section of the Cam Slot and the Slide Load is fed by 5mm.	Figure 23
	⑤	When the Pin enters the Concentric Circle Section of the Cam Slot, the Lever Link stops rotation and only the Cam Loading rotates and enters the U Slot.	Figure 24
	⑥	When the Pin enters the U Slot, the Lever Link rotates again and the Slider Load is further fed by 12mm (in total 17mm). This position is the end position for the Slider Load and the Cam Loading stops at the position rotated by 320 degrees. (The Timing Pin is disengaged from the Coupling Slot.)	Figure 25

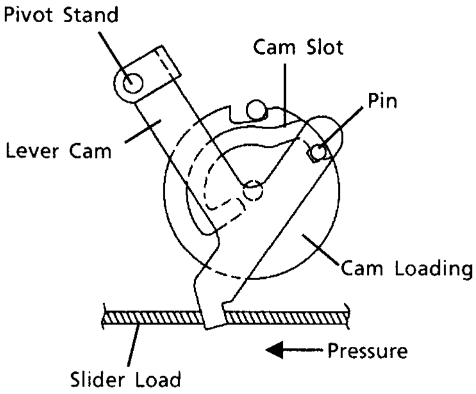

Pivot Stand
Cam Slot
Pin
Lever Cam
Cam Loading
Pressure
Slider Load

Figure 20

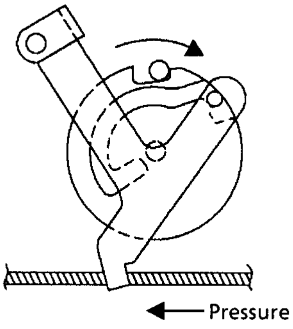


Figure 21

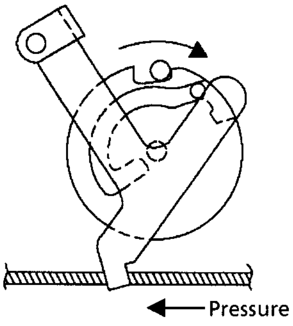


Figure 22

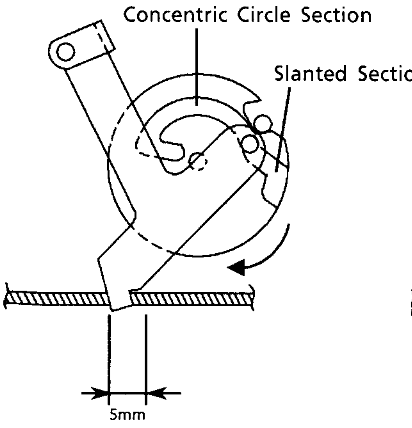

Concentric Circle Section
Slanted Section
5mm

Figure 23

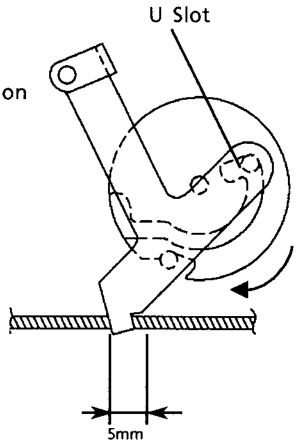


Figure 24

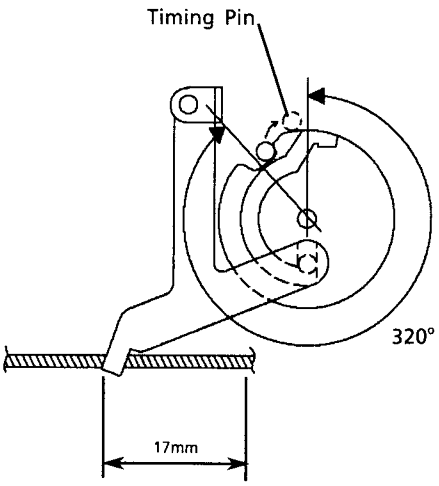

Timing Pin
320°
17mm

Figure 25

Function	Sequence	Operation	Illustration
Chucking operation (drive block is not shown)	①	The Slider Load moves downward by 17mm with rotation of the Lever Link. Following operations are carried out in connection with the motion of the Slider Load.	Figure 26 ①
	②	The Arm Lock (R) rotates clockwise and disengages from the Drive Unit.	Figure 26 ②
	③	The Arm Link (L) rotates counterclockwise and disengages from the Drive Unit.	Figure 26 ③
	④	The Lever Link is slid leftward.	Figure 26 ④
	⑤	The Stud Lock (F) disengages from the Drive Unit.	Figure 26 ⑤
	⑥	The Arm Lock (F) disengages from the Drive Unit.	Figure 26 ⑥
	⑦	The Arm Link (R) rotates clockwise.	Figure 26 ⑦
	⑧	The Slider Lock moves downward and the Lock section at the end disengages from the Drive Unit.	Figure 26 ⑧

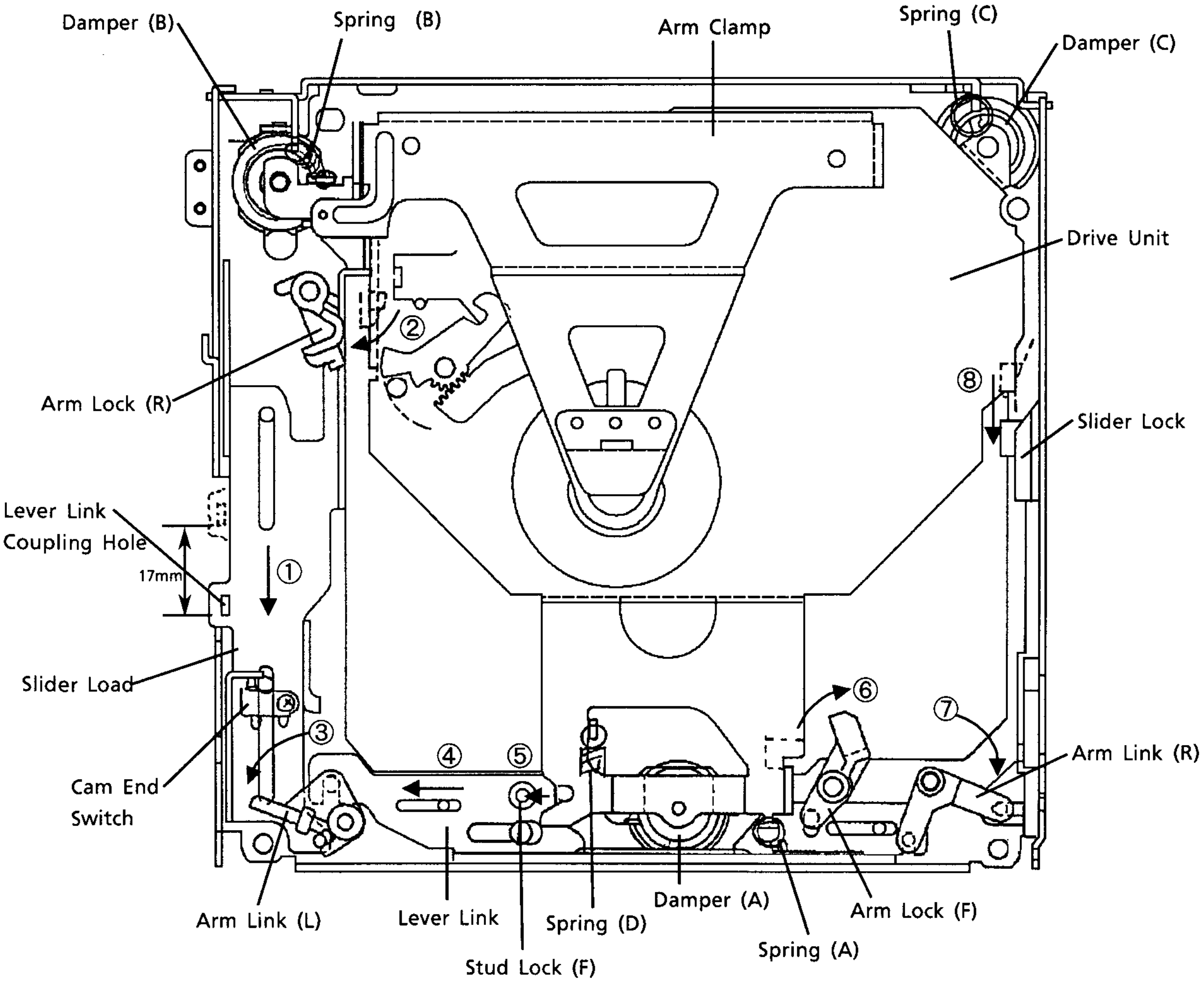
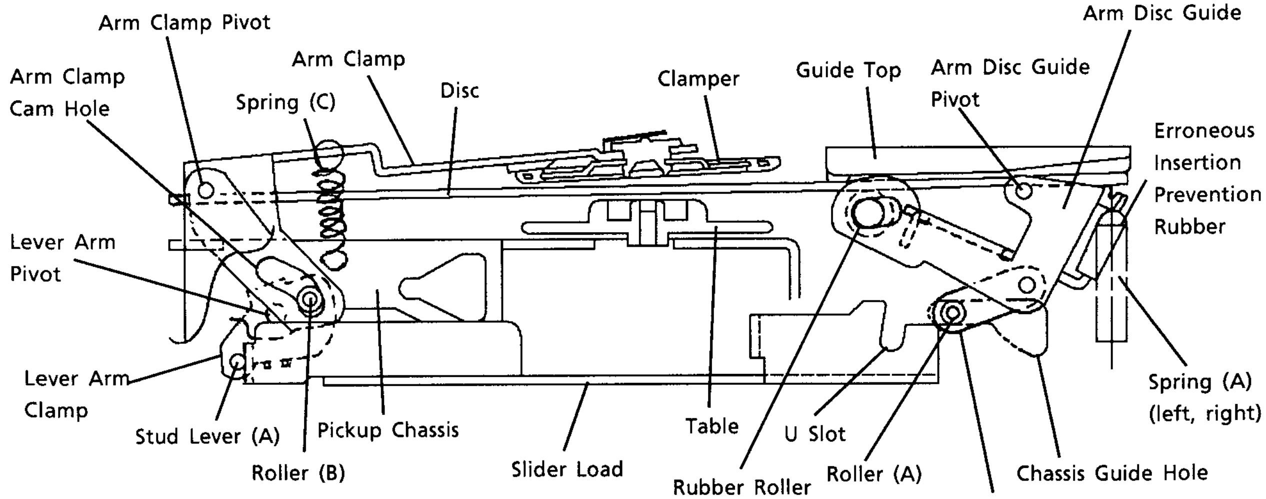

Damper (B)
Spring (B)
Arm Clamp
Spring (C)
Damper (C)
Drive Unit
②
⑧
Slider Lock
Arm Lock (R)
Lever Link Coupling Hole
17mm
①
Slider Load
Cam End Switch
③
④
⑤
⑥
⑦
Arm Link (R)
Arm Link (L)
Lever Link
Stud Lock (F)
Spring (D)
Damper (A)
Spring (A)
Arm Lock (F)

Figure 26

Function	Sequence	Operation	Illustration
Chucking operation (Disc Clamp)	①	When the chucking operation starts, the Slider Load moves rightward by 17mm. Following operations are carried out in relation to the motion of the Slider Load.	Figure 27 ①
	②	As the protruded Section of Slider Load pressing the Stud Lever (A) leftward moves rightward, entire of the Lever Arm Clamp is rotated counterclockwise by force of the Spring (B).	Figure 27 ②
	③	The Roller (B) provided on the Lever Arm Clamp rotates counterclockwise in the Arm Clamp Cam Hole. This motion guides the Arm Clamp and the Arm Clamp is rotated clockwise by force of the Spring (C).	Figure 27 ③
	④	Top of the Arm Clamp lowers and the Clamper drops downward.	Figure 27 ④
	⑤	The U Slot of the Slider Load presses the Roller (A) and the Roller (A) moves rightward along to the chassis guide hole.	Figure 27 ⑤
	⑥	This motion of the Roller (A) is transferred to the Arm Disc Guide through the Arm Roller Down and the Arm Disc Guide rotates counterclockwise and the Rubber Roller moves downward.	Figure 27 ⑥
	⑦	Erroneous Insertion Prevention Rubber provided on the Arm Disc Guide covers the disc Insertion Slot.	Figure 27 ⑦

Chucking start


Arm Clamp Pivot
Arm Disc Guide
Arm Clamp
Arm Clamp Cam Hole
Spring (C)
Disc
Clamper
Guide Top
Arm Disc Guide Pivot
Erroneous Insertion Prevention Rubber
Lever Arm Pivot
Lever Arm Clamp
Stud Lever (A)
Pickup Chassis
Roller (B)
Slider Load
Table
U Slot
Rubber Roller
Roller (A)
Spring (A) (left, right)
Chassis Guide Hole
Arm Roller Down

Chucking end

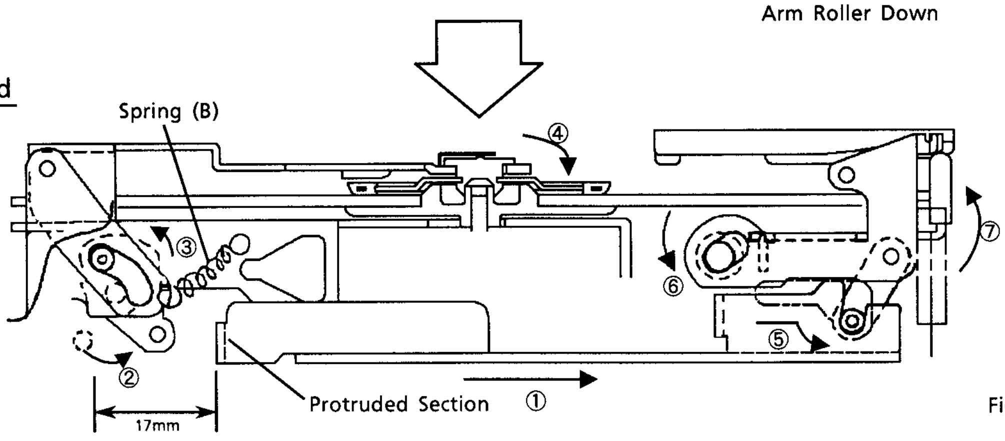

Spring (B)
④
③
⑥
⑦
⑤
②
17mm
Protruded Section
①

Figure 27

Function	Sequence	Operation	Illustration
Pickup feed operation	①	The Sled Motor rotates, the speed is reduced by the Motor Gear, Middle Gear and Gear Screw, and the Shaft Screw rotates.	Figure 28
	②	The Spring nut engaging with the Shaft Screw is fed to inner or outer side by the rotation of the Shaft Screw, and the Pickup moves along to two Shafts.	

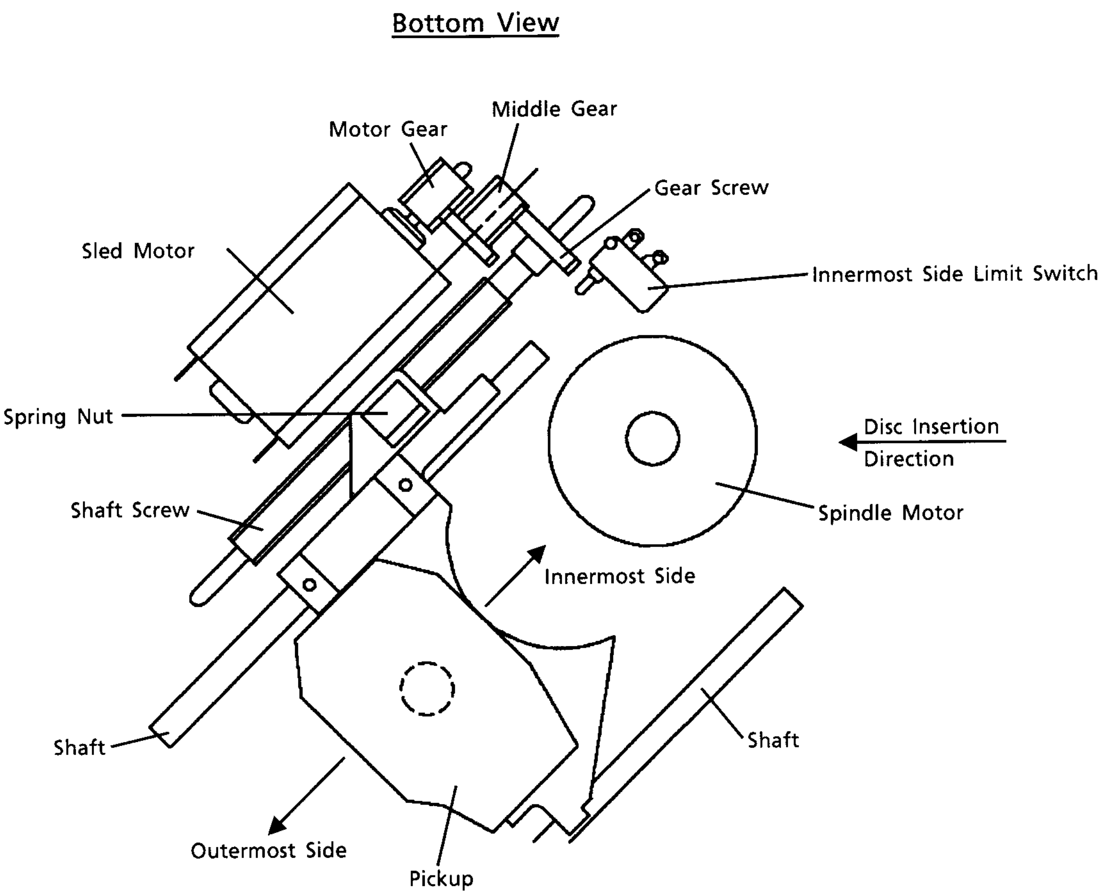

Bottom View
Middle Gear
Motor Gear
Gear Screw
Sled Motor
Innermost Side Limit Switch
Spring Nut
Disc Insertion Direction
Shaft Screw
Spindle Motor
Innermost Side
Shaft
Shaft
Outermost Side
Pickup

Figure 28

Function	Sequence	Operation	Illustration
Disc eject operation	①	12cm / 8cm Disc position during playback. When the eject button is pushed, and the Photo Sensor (C) is interrupted, it is determined that a 12cm Disc is loaded. On the other and if it is not interrupted it is determined that an 8cm Disc is loaded, and the eject operation starts.	Figure 29 ①
	②	Releasing operations of the Rubber Roller, Clamper and Drive Lock are carried out in reverse order as those in the chucking operations. In this case, Switch Pin returning operation is added. With this operation, the Switch Pin is returned to vertical direction and its top drops onto the position determination slot of the Drive Unit.	Figure 29 ②
	③	12cm Disc is stopped when the eject position is detected with the Photo Sensor (B) not interrupted.	Figure 29 ③
	④	8cm Disc is stopped when the eject position is detected with the Photo Sensor (C) not interrupted.	Figure 29 ④
	⑤	The Lever Pin Lock performs Switch Pin lock operation and returns to the initial status.	Figure 29 ⑤

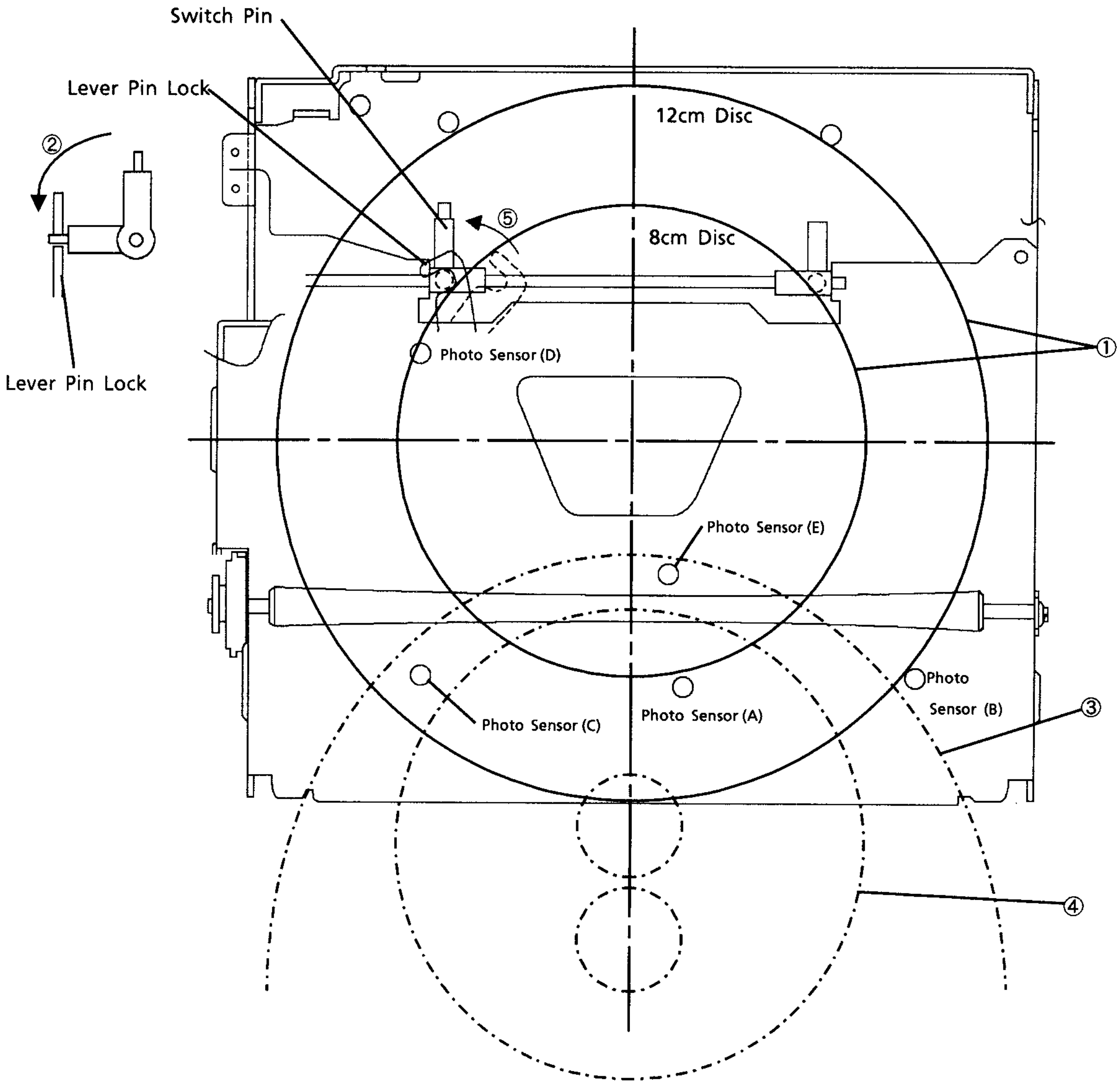

Switch Pin
Lever Pin Lock
②
Lever Pin Lock
12cm Disc
8cm Disc
⑤
①
Photo Sensor (D)
Photo Sensor (E)
Photo Sensor (C)
Photo Sensor (A)
Photo Sensor (B)
③
④

Figure 29

Function	Sequence	Operation	Illustration
Operation of Gear Cam and Cam Loading in eject operations	①	When the eject button is pressed, the Loading Motor rotates in reverse direction from the direction as in the Loading operation, and the Gear Cam rotates counterclockwise through the a Gear.	Figure 30
	②	The Timing Pin drops in the Coupling Slot of the Cam Loading and the Cam Loading and the Gear Cam coupled together start to rotate.	Figure 31
	③	After rotation of 320 degrees, top of the Arm Timing touches the Remove Pin.	Figure 32
	④	And the top of the Arm Timing is raised by the Remove Pin, and the Arm Timing is rotated clockwise. Then, the Timing Pin begins to come out from the Coupling Slot.	Figure 33
	⑤	The Timing Pin comes out from the Coupling Slot, the Cam Loading stops, and only the Gear Cam rotates idly.	Figure 34

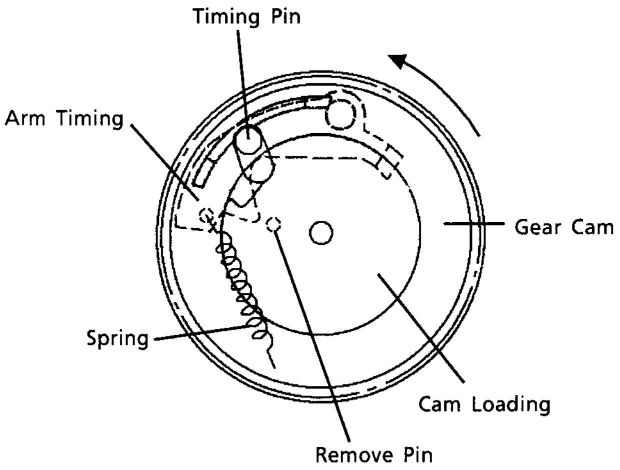


Figure 30

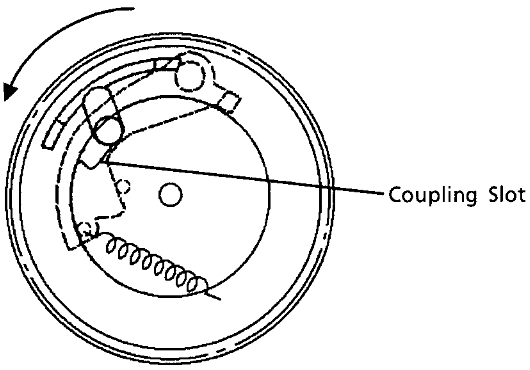


Figure 31

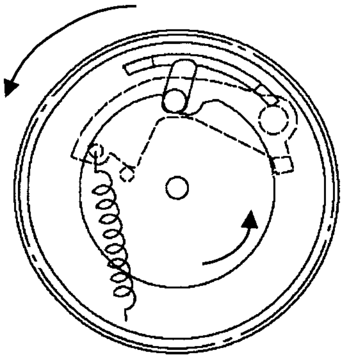


Figure 32

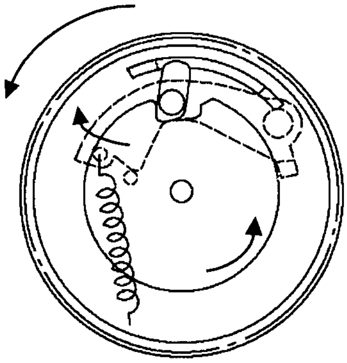


Figure 33

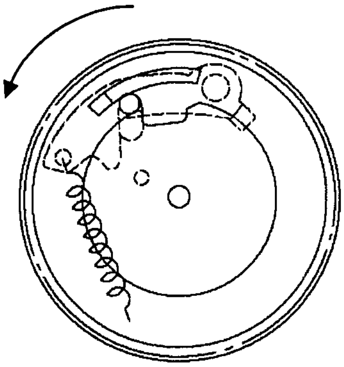


Figure 34

Function	Sequence	Operation	Illustration
Eject operation (Switch Lever returning)	①	The eject start position is located at right of the Rack Gear (A) and the Rack and the Gear (A) are engaged when the Slider Load moves leftward. · · · ⓒ	Figure 36
	②	The Gear (B) and the Gear (C) start to engage when the Rack is fed by 12mm. · · · ⓑ	
	③	The eject operation completes when the Rack moves by 17mm. The Gear (A) returns to the original position by force of the Spring. · · · ⓒ The Gear (C) separates from the Gear (B). · · · ⓑ The Switch Lever rotates and returns to the vertical position and fixed at that position by force of the Inversion Spring. · · · ⓐ	

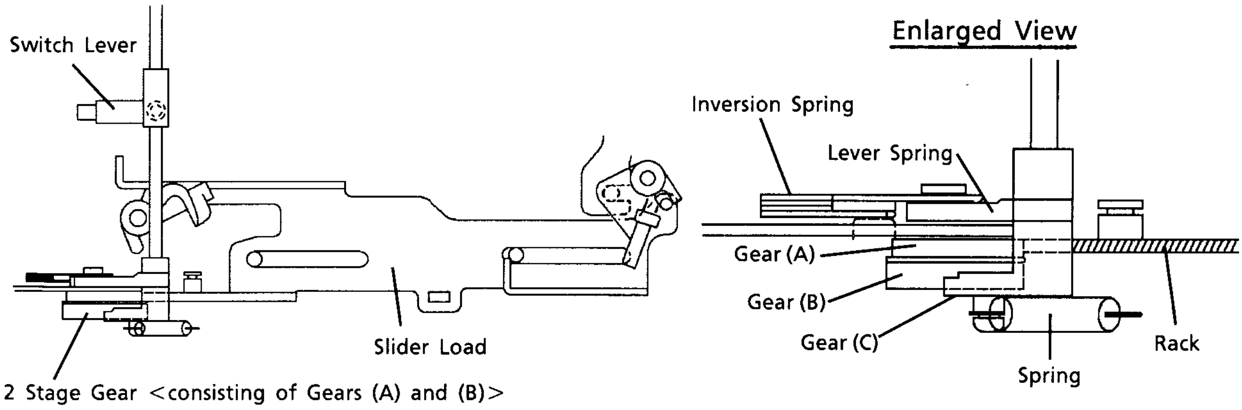
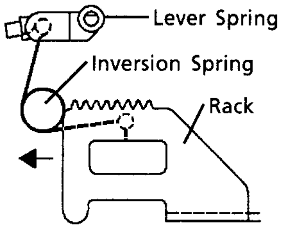
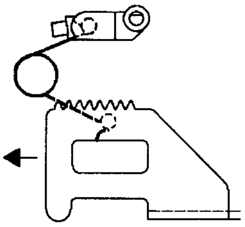
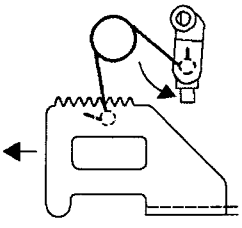
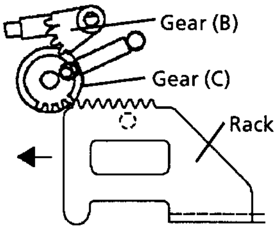
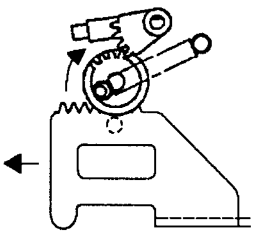
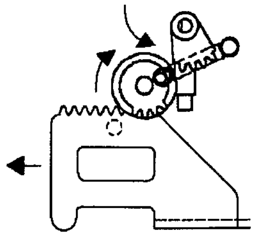
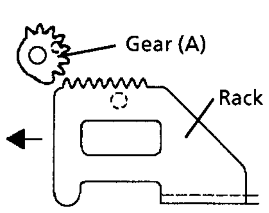
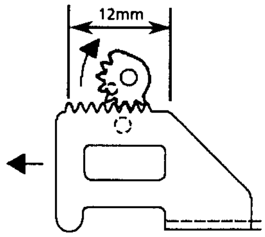
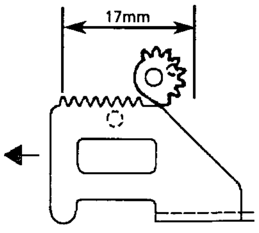

Switch Lever
Slider Load
2 Stage Gear <consisting of Gears (A) and (B)>
Enlarged View
Inversion Spring
Lever Spring
Gear (A)
Gear (B)
Gear (C)
Spring
Rack

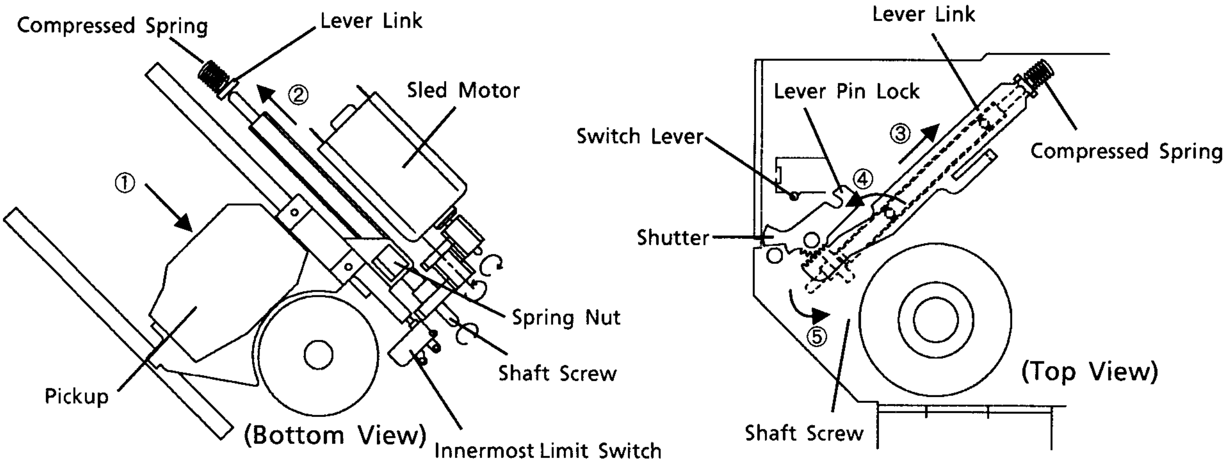
Figure 35

Figure 36

	①	②	③
ⓐ Operations of Inversion Spring and Lever Spring	 Lever Spring Inversion Spring Rack		
ⓑ Operations of Gears (B) and (C)	 Gear (B) Gear (C) Rack		
ⓒ Operations of Gear (A) and Rack	 Gear (A) Rack	 12mm	 17mm

Function	Sequence	Operation	Illustration
Operation of Switch Pin Lock	①	When the Pickup moves inner side and touches the stopper, it stops, but the Motor continues to rotate. In this case, the Innermost Limit Switch is pushed and it is determined that the Pickup reached the Innermost end.	Figure 37 ①
	②	As the Spring Nut does not move to inner side, a force (as a reaction) in outer side direction is applied to the Shaft Screw. The Shaft Screw has a clearance in the thrust direction and deviated to inner side direction with a Compressed Spring. As a result, it presses the Spring when the force in outer side direction is applied, and the Shaft moves outer side.	Figure 37 ②
	③	The force in the outer direction is transferred to the Lever Link and the Lever Link moves the outer side in the same way.	Figure 37 ③
	④	The Lever Pin Lock rotates cLockwise through the Rack.	Figure 37 ④
	⑤	The Shutter provided on the Lever Pin Lock moves in direction which interrupts the Photo Sensor (D).	Figure 37 ⑤
	⑥	The Photo Sensor (D) is uninterrupted when the Shaft moves by 3mm. This is detected and used to stop the Motor.	Figure 37 ⑥
	⑦	At this position, the Lever Pin Lock engages the Switch Pin and Locks.	Figure 37 ⑦

Ⓐ Lock operation start


Compressed Spring
Lever Link
②
Sled Motor
①
Pickup
Spring Nut
Shaft Screw
Innermost Limit Switch
(Bottom View)
Lever Link
Lever Pin Lock
Switch Lever
③
④
Compressed Spring
Shutter
⑤
Shaft Screw
(Top View)

Ⓑ Lock operation complete

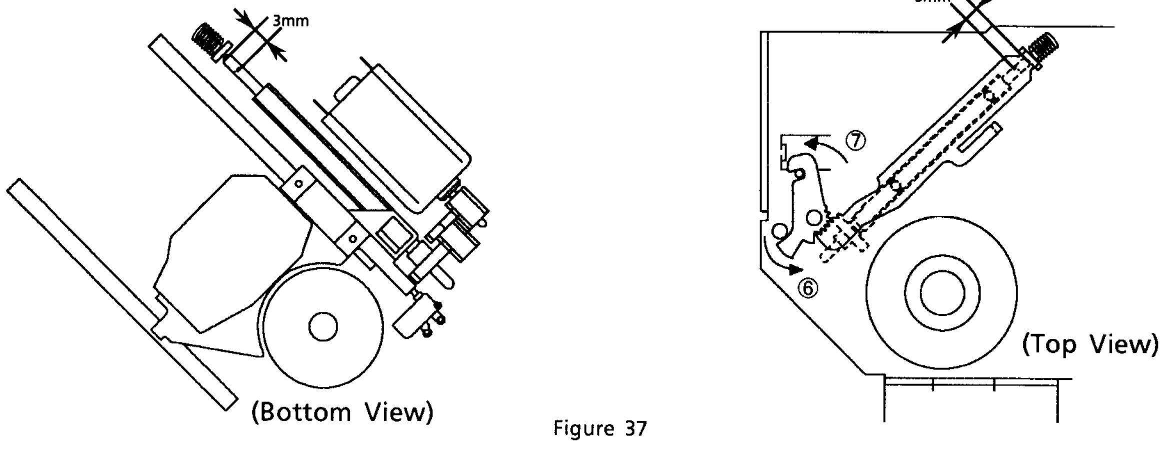
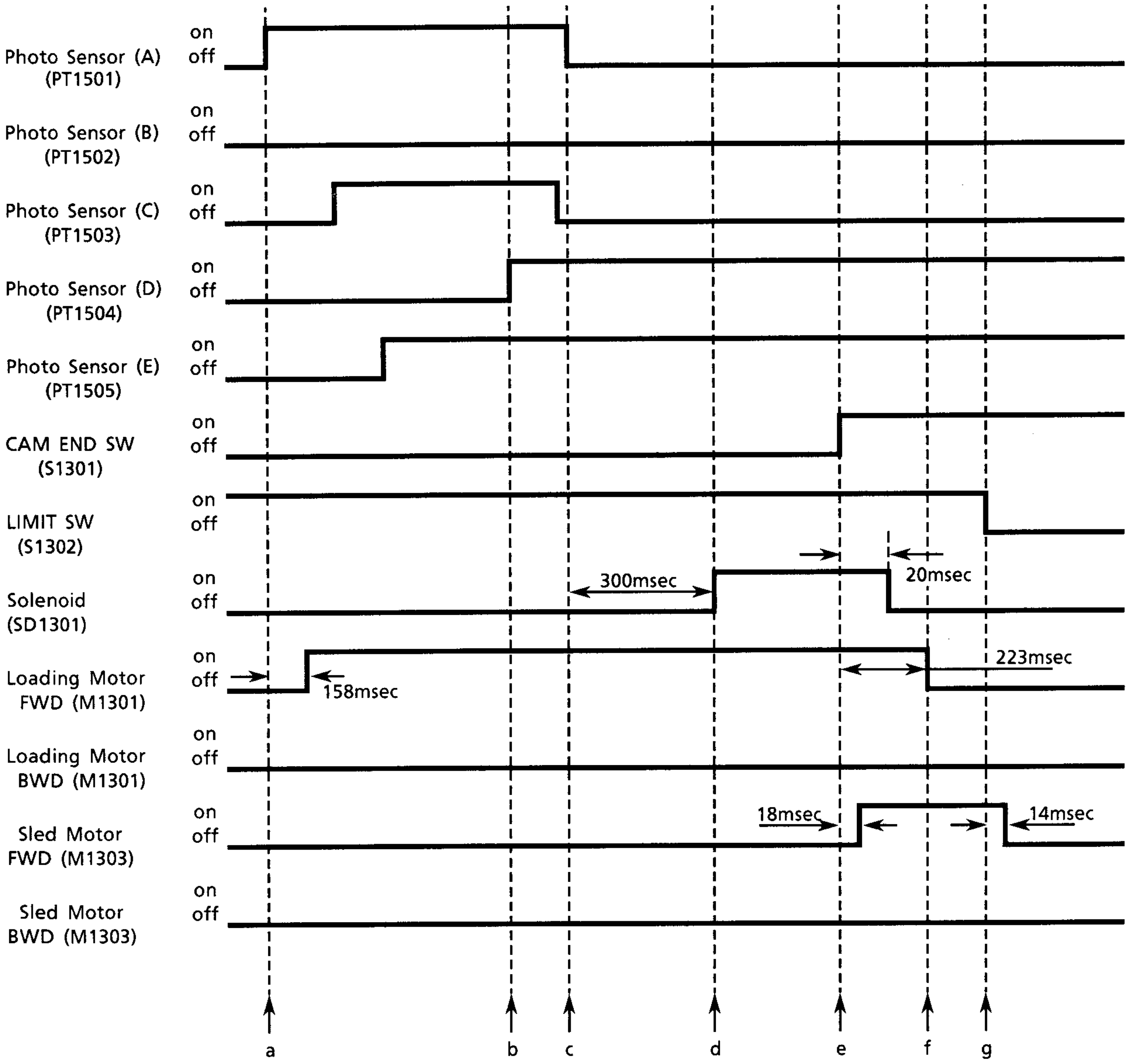

3mm
(Bottom View)
3mm
⑦
⑥
(Top View)

Figure 37

Timing Chart

8cm Disc Loading Timing Chart



a. With the Photo Sensor (A) turned on, the Loading Motor FWD is turned on.

b. With the Photo Sensors (A) and (C) not turned on at the same time but the Photo Sensor (D) turned on, the disc type is determined as an 8cm Disc.

c. With both of the Photo Sensors (A) and (C) turned off, a 300msed timer is set.

d. With both of the Photo Sensors (A) and (C) turned off after 300msec elapsed, the Solenoid is turned on.

e. With the CAM END SW turned on, the Solenoid is turned off and a 200msec timer is set. At the same time the Sled is moved to outermost side.

f. After 200msec elapsed, the Loading Motor FWD is turned off.

g. With the LIMIT SW turned off, the Sled Motor FWD is turned off.

Lock on Timing Chart

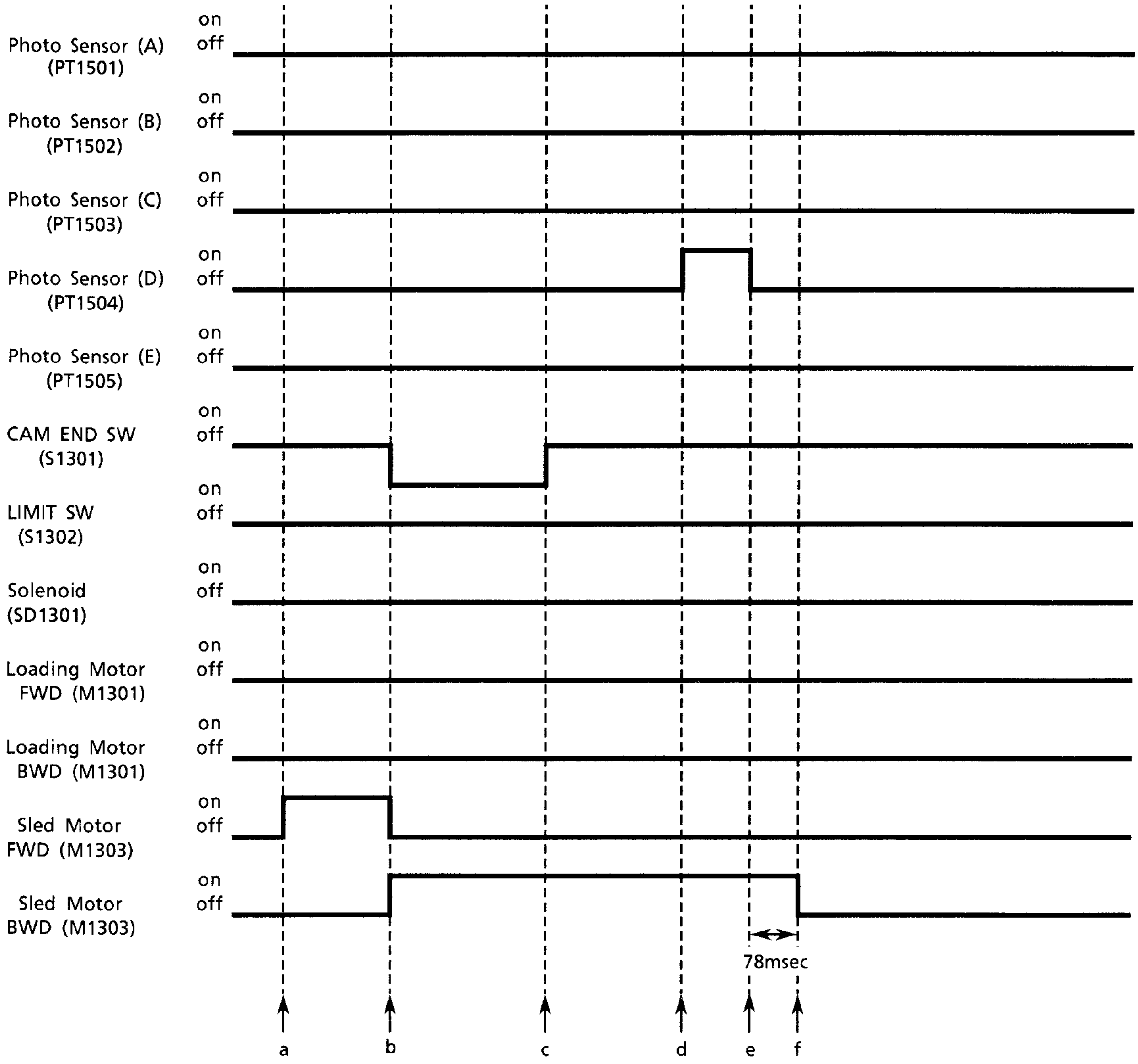
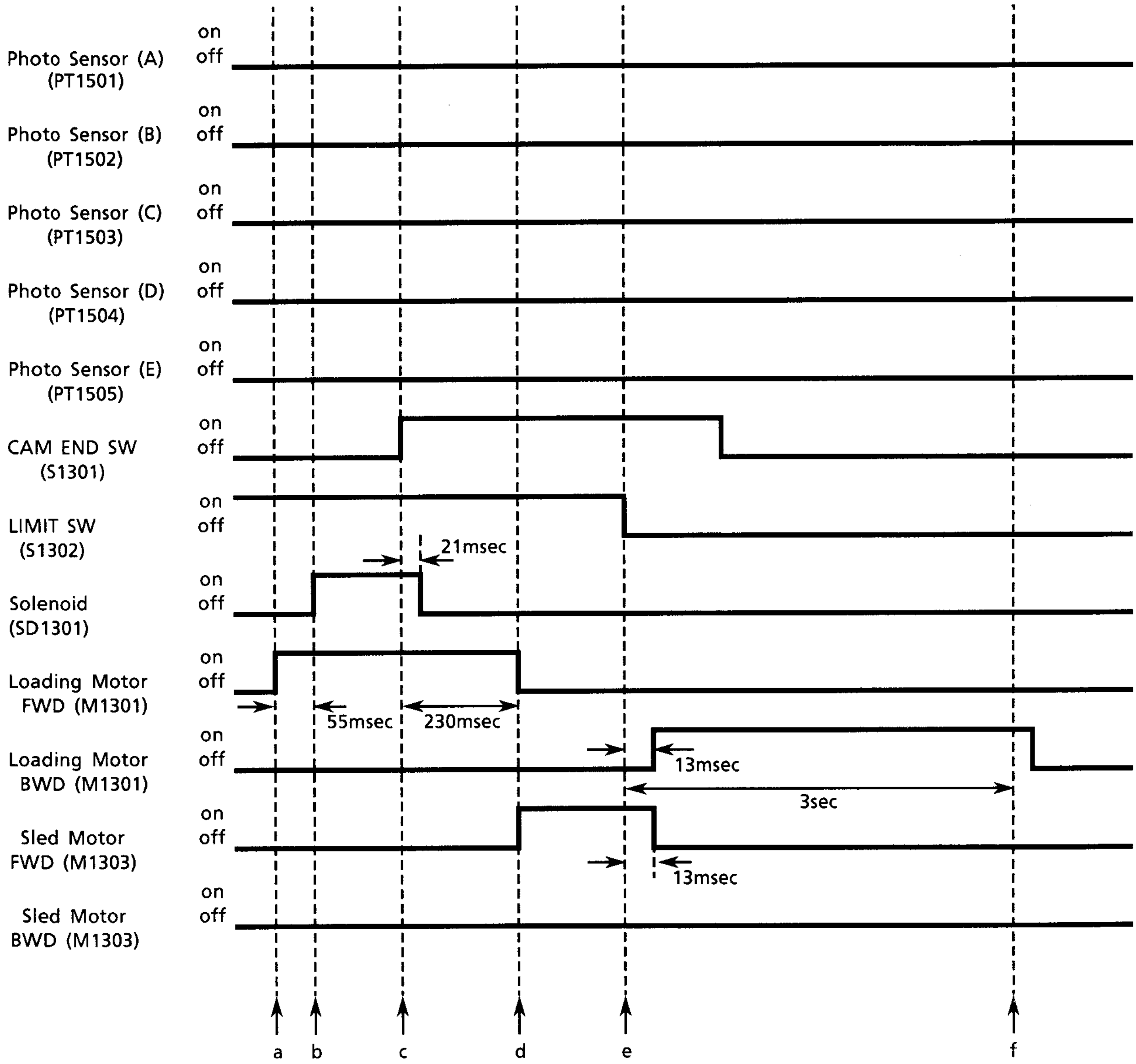


Photo Sensor (A) (PT1501)
Photo Sensor (B) (PT1502)
Photo Sensor (C) (PT1503)
Photo Sensor (D) (PT1504)
Photo Sensor (E) (PT1505)
CAM END SW (S1301)
LIMIT SW (S1302)
Solenoid (SD1301)
Loading Motor FWD (M1301)
Loading Motor BWD (M1301)
Sled Motor FWD (M1303)
Sled Motor BWD (M1303)
on
off
78msec
a
b
c
d
e
f

a. As the LIMIT SW is on, the Sled is once moved to the outermost side to turn off the LIMIT SW.
b. With the LIMIT SW turned off, the Sled is moved to the innermost side.
c. The LIMIT SW is turned on.
d. Photo Sensor (D) is turned on.
e. With the Photo Sensor (D) turned off, a 65msec timer is set.
f. After 65msec elapsed, the Sled Motor is turned off.

Single Guard on Timing Chart



a. The Loading Motor FWD is turned on and a 50msec timer is set.

b. After 50msec elapsed, the Solenoid is turned on.

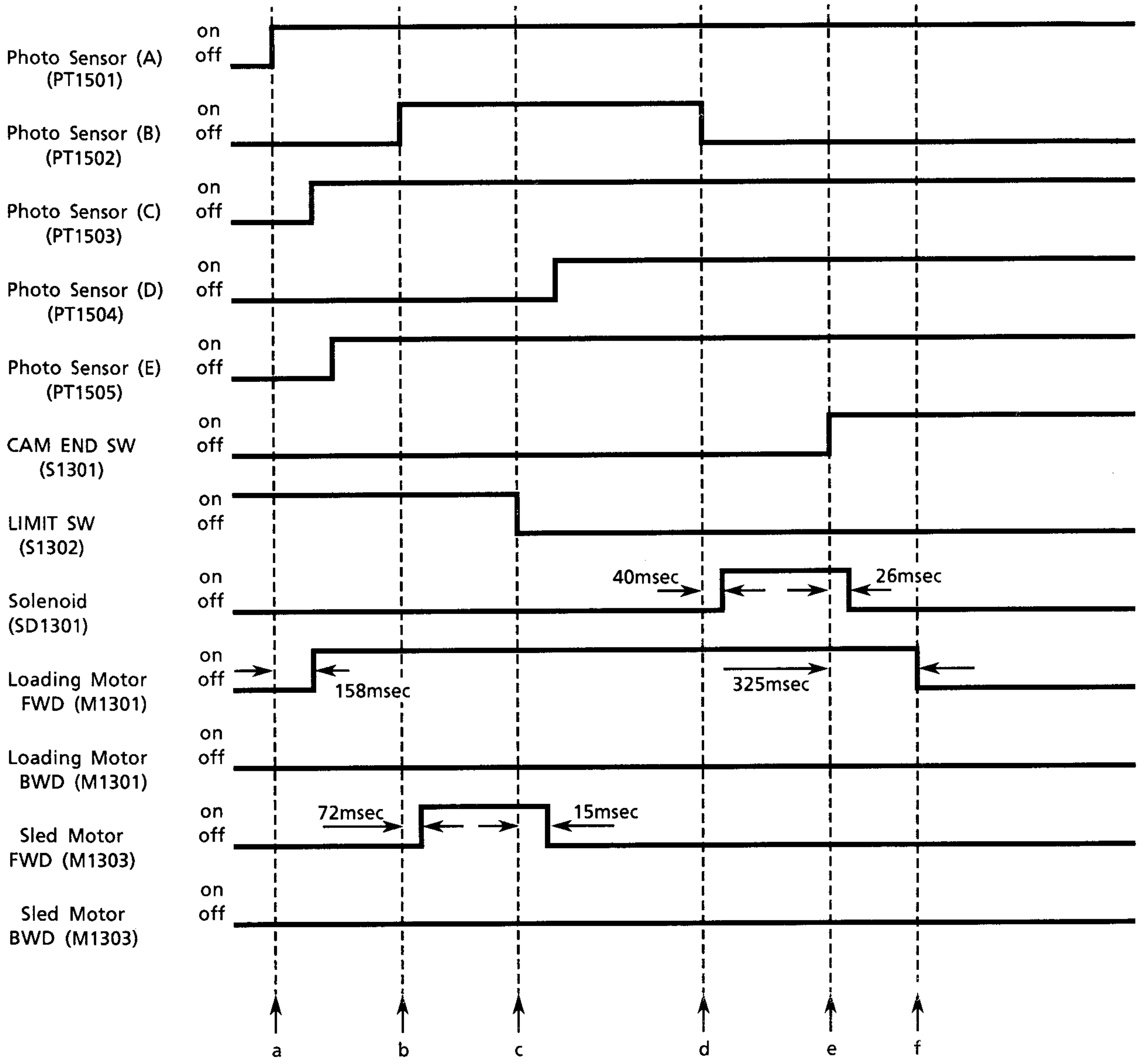
c. With the CAM END SW turned on, the Solenoid is turned off. The 200msec timer is set.

d. After 200msec elapsed, the Loading Motor FWD is turned off. As the LIMIT SW is turned on, the Sled is moved to the outermost side and the lock is released.

e. With the LIMIT SW turned off, the Sled is turned off. The Loading Motor BWD is turned on and a 3sec timer is set.

f. After 3sec elapsed, the Loading Motor BWD is turned off.

12cm Disc Loading Timing Chart



a. With the Photo Sensor (A) turned on, the Loading Motor FWD is turned on.

b. As the Photo Sensors (B) and (C) are turned on, the disc type is determined as a 12cm disc. The Sled is moved to the outermost side to release the lock.

c. With the LIMIT SW turned off, the Sled is turned off.

d. As the Photo Sensor (B) is turned off and the Photo Sensor (D) is on, the Solenoid is turned on.

e. With the CAM END SW turned on, the Solenoid is turned off and the 200msec timer is set.

f. After 200msec elapsed, the Loading Motor FWD is turned off.

12cm Disc Eject Timing Chart

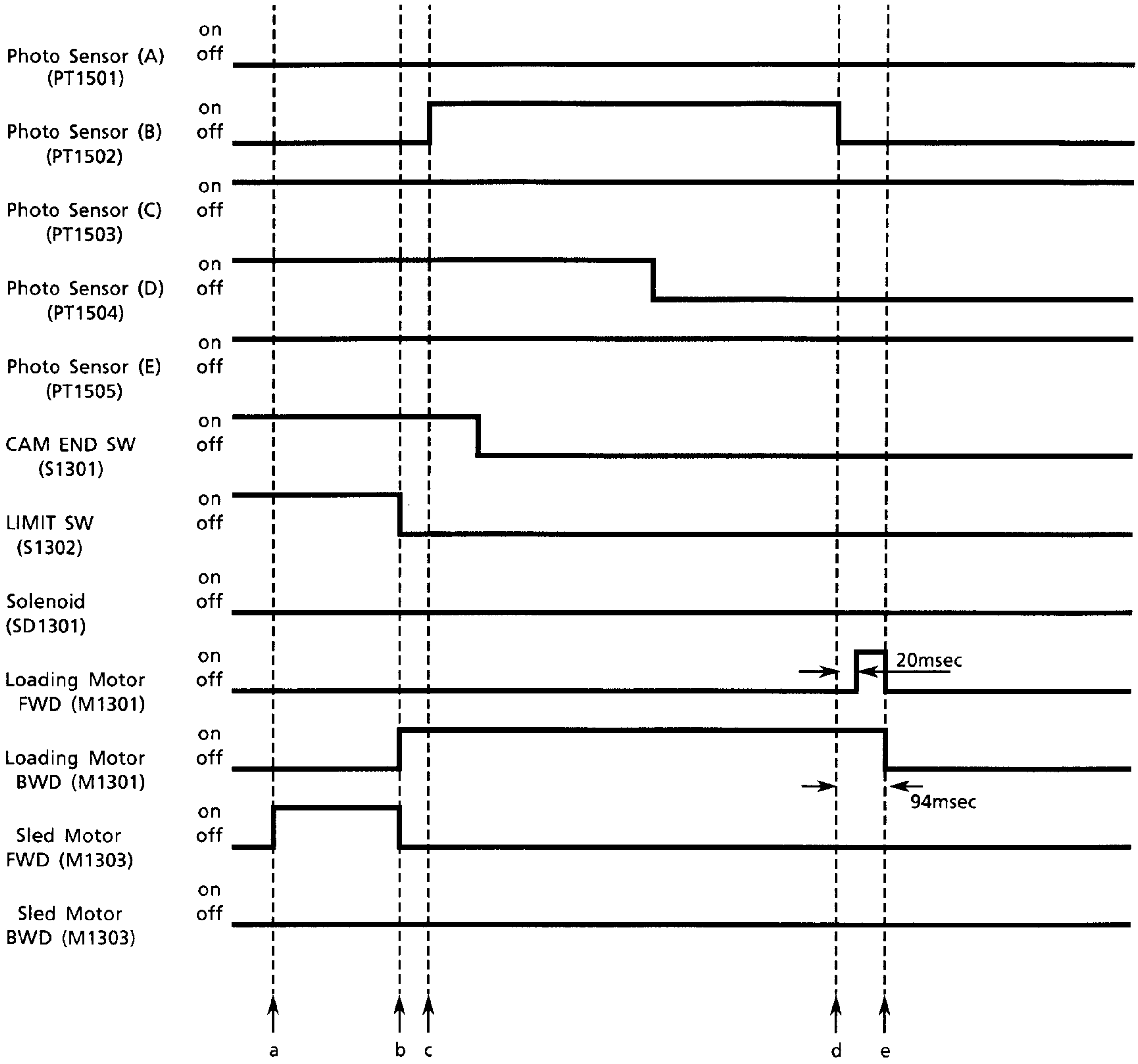


Photo Sensor (A)
(PT1501)
Photo Sensor (B)
(PT1502)
Photo Sensor (C)
(PT1503)
Photo Sensor (D)
(PT1504)
Photo Sensor (E)
(PT1505)
CAM END SW
(S1301)
LIMIT SW
(S1302)
Solenoid
(SD1301)
Loading Motor
FWD (M1301)
Loading Motor
BWD (M1301)
Sled Motor
FWD (M1303)
Sled Motor
BWD (M1303)
on
off
20msec
94msec
a
b
c
d
e

a. As the LIMIT SW is turned on, the Sled is moved to the outermost side to release the lock.

b. With the LIMIT SW turned off, the Sled is Turned off. The Loading Motor BWD is turned on.

c. The Photo Sensor (B) is turned on.

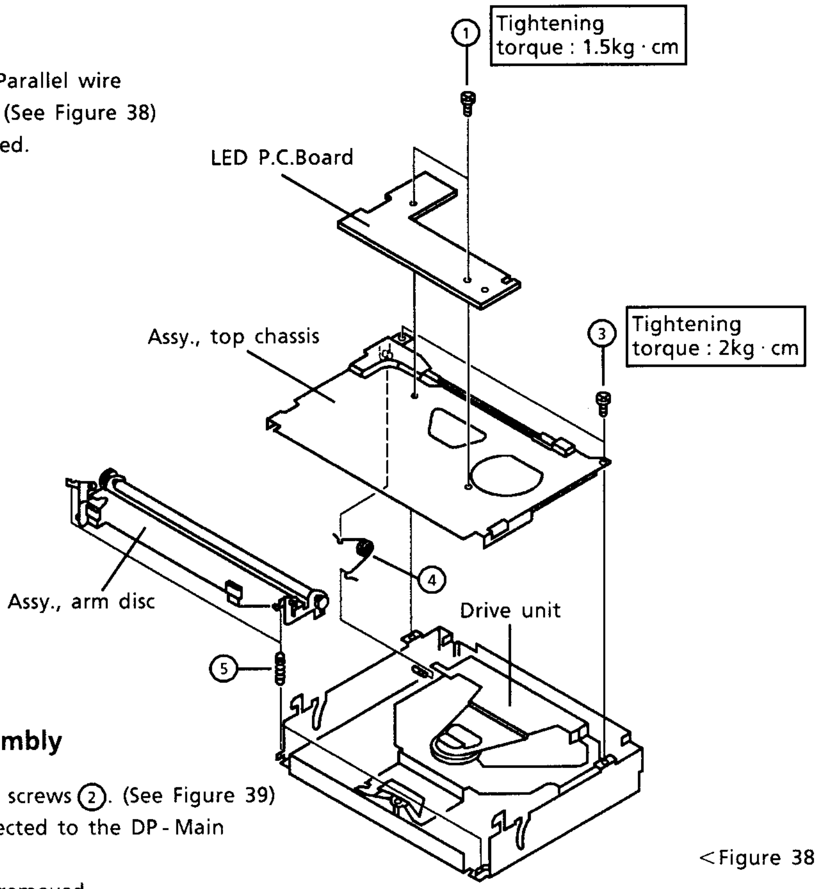
d. With the Photo Sensor (B) turned off, the Loading Motor FWD is set and the 50msec timer is set. (Brake ON).

e. After 50msec elapsed, the Loading Motor FWD and the Loading Motor BWD are turned off.

Component disassembly and assembly notes

1. LED P.C.Board disassembly

(1) Remove two screws ①and the Parallel wire connected to the LED P.C.Board. (See Figure 38)
The LED P.C.Board can be removed.


①
Tightening torque : 1.5kg · cm
LED P.C.Board
Assy., top chassis
③
Tightening torque : 2kg · cm
④
Assy., arm disc
Drive unit
⑤

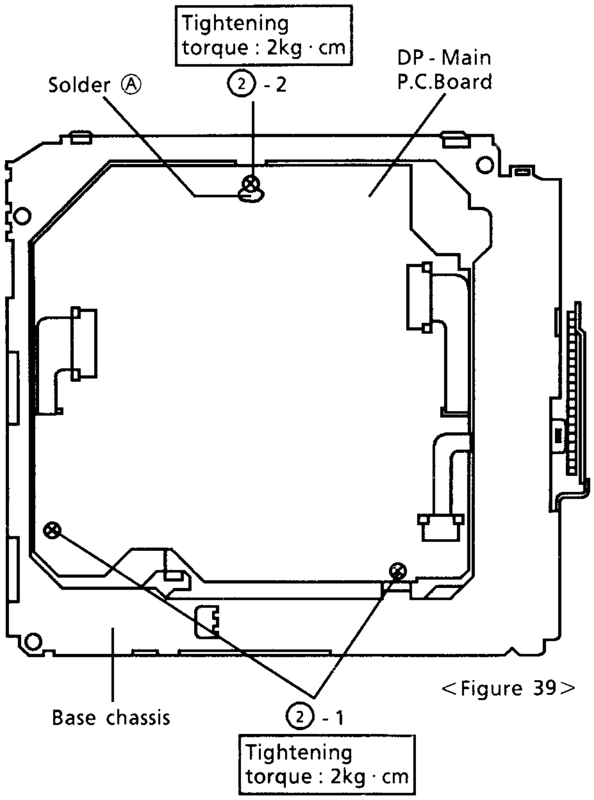
<Figure 38>

2. DP - Main P.C.Board disassembly

(1) Remove the Solder Ⓐ and three screws ②. (See Figure 39)
(2) Remove the all connectors connected to the DP - Main P.C.Board.
The DP - Main P.C.Board can be removed.

<Assembly note>

- The screw ②- 2 type is different from that of the screws ②- 1.


Tightening torque : 2kg · cm
Solder Ⓐ
② - 2
DP - Main P.C.Board
Base chassis
② - 1
Tightening torque : 2kg · cm

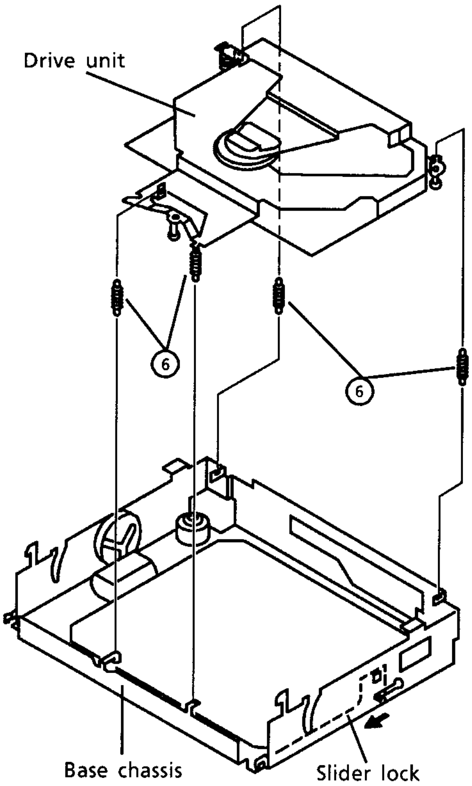
<Figure 39>

3. Drive unit disassembly

(1) Remove two screws ③ and one spring ④, the Assy., top chassis can be removed. (See Figure 38)
(2) Remove two springs⑤, the Assy., arm disc can be removed. (See Figure 38)
(3) Remove four springs⑥, pull up the Drive unit. (See Figure 40)
The Drive unit can be removed.

<Assembly note>

- Move the Slider lock fully in the direction indicated by the arrow. (See Figure 40)

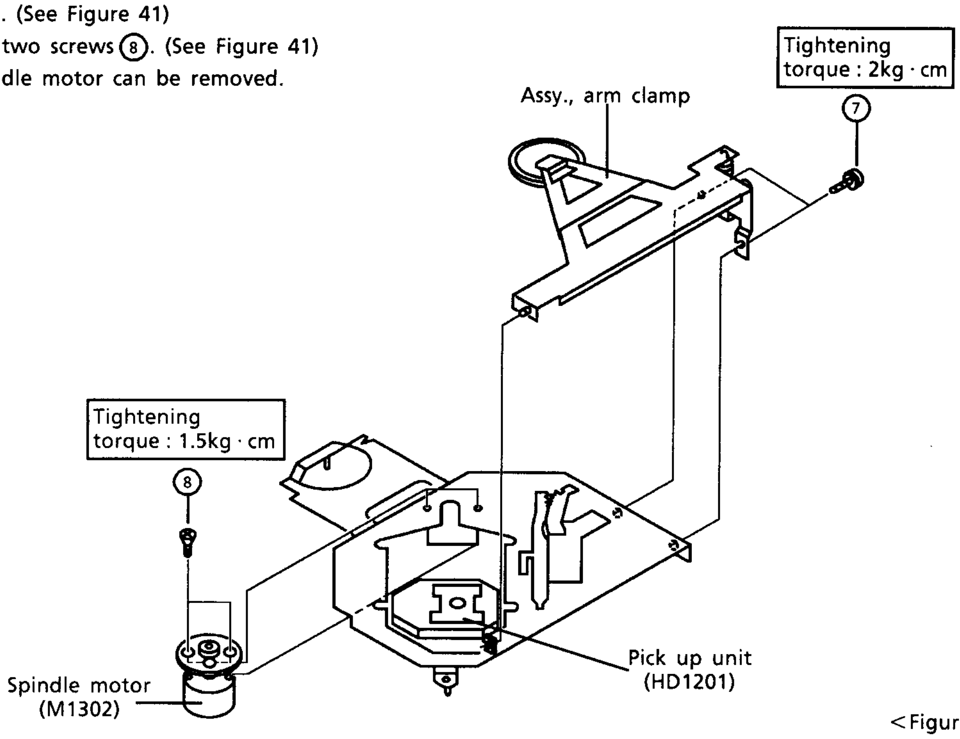

Drive unit
⑥
⑥
Base chassis
Slider lock

<Figure 40>

4. Spindle motor (M1302) disassembly

(1) Remove two screws ⑦, the Assy., arm clamp can be removed. (See Figure 41)

(2) Remove two screws ⑧. (See Figure 41) The Spindle motor can be removed.


Tightening
torque : 2kg · cm
Assy., arm clamp
⑦
Tightening
torque : 1.5kg · cm
⑧
Spindle motor
(M1302)
Pick up unit
(HD1201)

<Figure 41>

5. Pick up unit (HD1201) disassembly

- Wear an electrostatic discharge band when disassembling the Pick up unit. Do not touch the lens or P.C.Board.

(1) Remove two screws ⑨, the Spring nut can be removed. (See Figure 42)

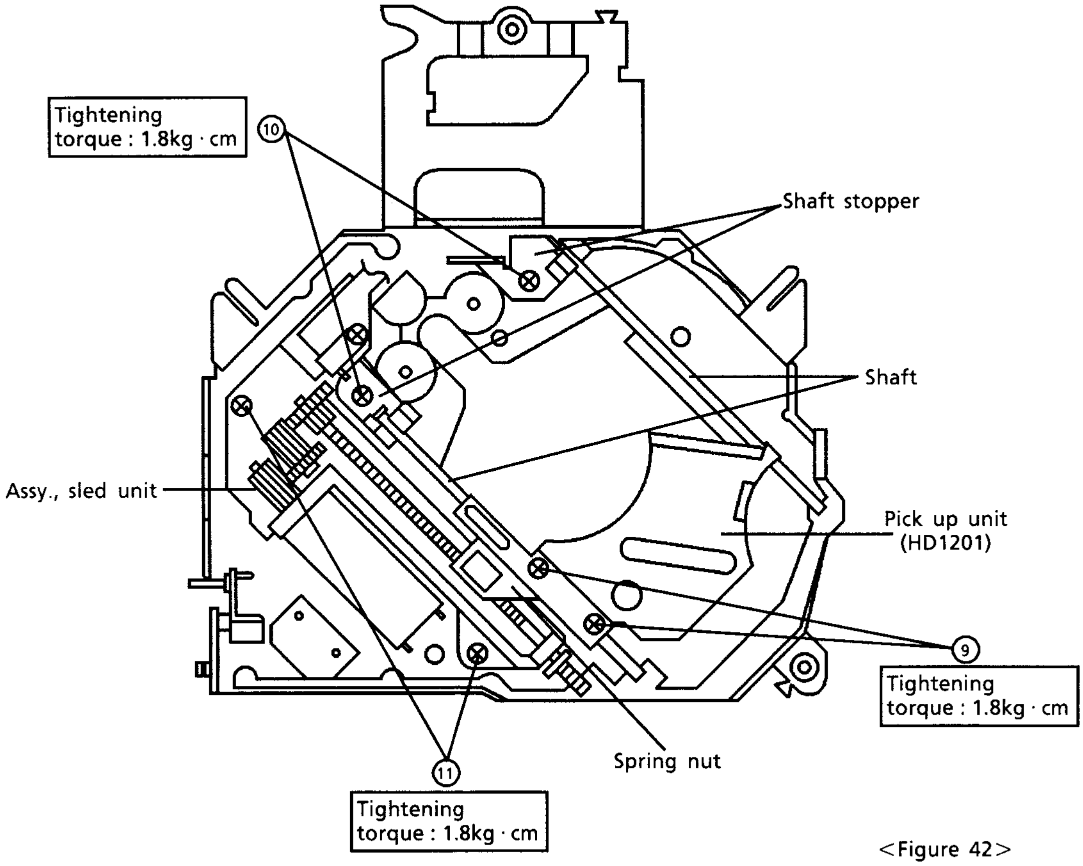
(2) Remove two screws ⑩, the two Shaft stopper can be removed. (See Figure 42)

(3) Remove two Shaft. (See Figure 42)

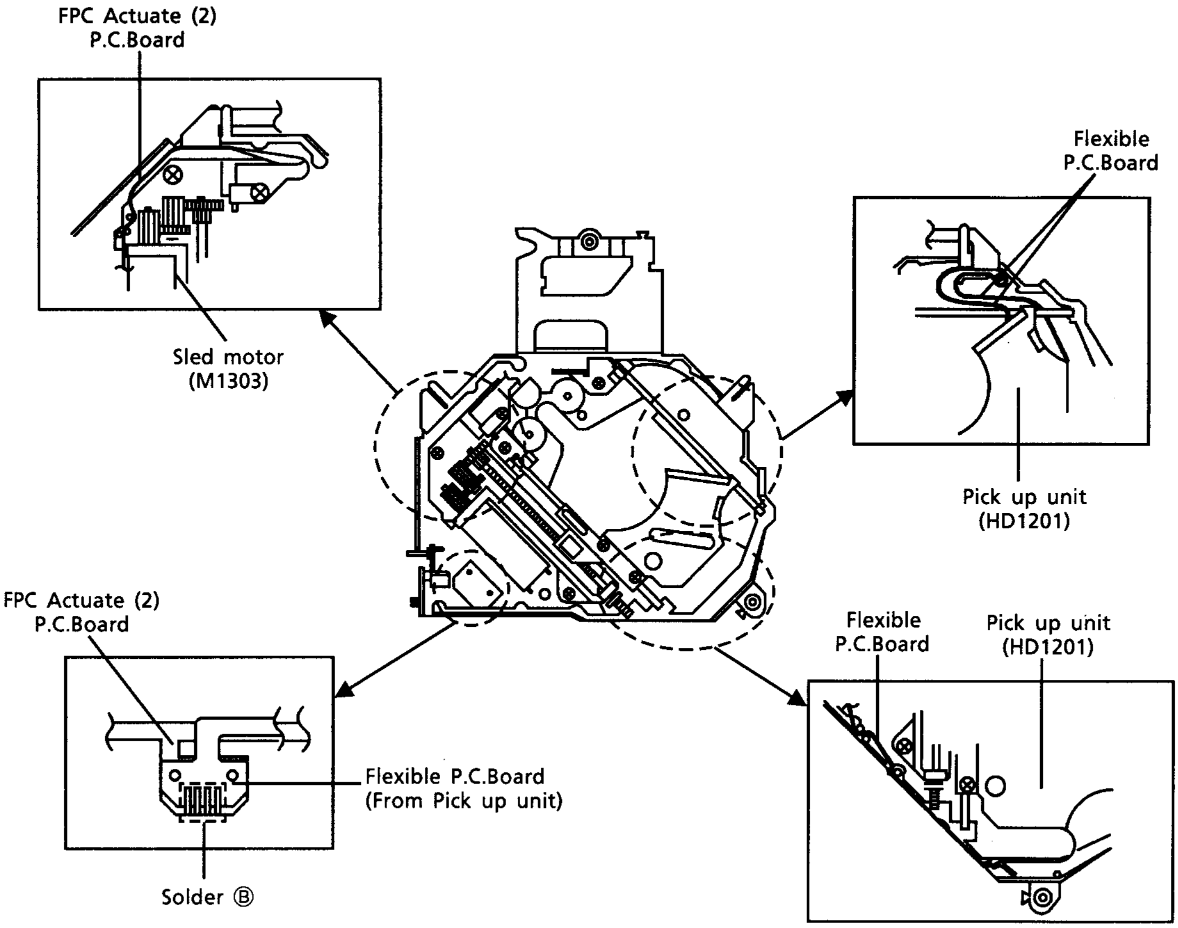
(4) Remove the Solder Ⓑ connected between FPC Actuate (2) P.C.Board and Flexible P.C.Board (Pick up unit). (See Figure 43)
Note : Don't cut Flexible P.C.Board by removing Solder Ⓑ.
The Pick up unit can be removed.

<Assembly notes>

- Always wear an electrostatic discharge band.
- Never touch the lens of the Pick up unit or P.C.Board.
- Form the two Flexible P.C.Board from the Pick up unit as shown in Figure 43.


Tightening torque : 1.8kg · cm
⑩
Shaft stopper
Shaft
Assy., sled unit
Pick up unit (HD1201)
⑨
Tightening torque : 1.8kg · cm
Spring nut
⑪
Tightening torque : 1.8kg · cm

<Figure 42>


FPC Actuate (2)
P.C.Board
Sled motor
(M1303)
Flexible
P.C.Board
Pick up unit
(HD1201)
FPC Actuate (2)
P.C.Board
Flexible P.C.Board
(From Pick up unit)
Solder Ⓑ
Flexible
P.C.Board
Pick up unit
(HD1201)

<Figure 43>

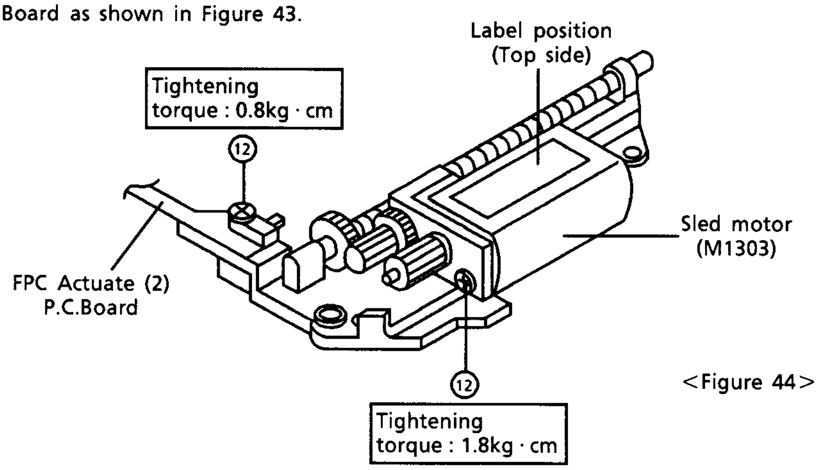
6. Sled motor (M1303) disassembly

(1) Remove two screws ⑪, the Assy., sled unit can be removed. (See Figure 42)

(2) Remove two screws ⑫. (See Figure 44)
The Sled motor with FPC Actuate (2) P.C.Board can be removed.

<Assembly notes>

- Mount the Sled motor (M1303) so the label position is correct. (See Figure 44)
- Form the FPC Actuate (2) P.C.Board as shown in Figure 43.


Label position
(Top side)
Tightening
torque : 0.8kg · cm
⑫
Sled motor
(M1303)
FPC Actuate (2)
P.C.Board
⑫
Tightening
torque : 1.8kg · cm

<Figure 44>

7. Loading motor (M1301) disassembly

(1) Remove two screws⑬, the Assy., loading gear can be removed. (See Figure 45)

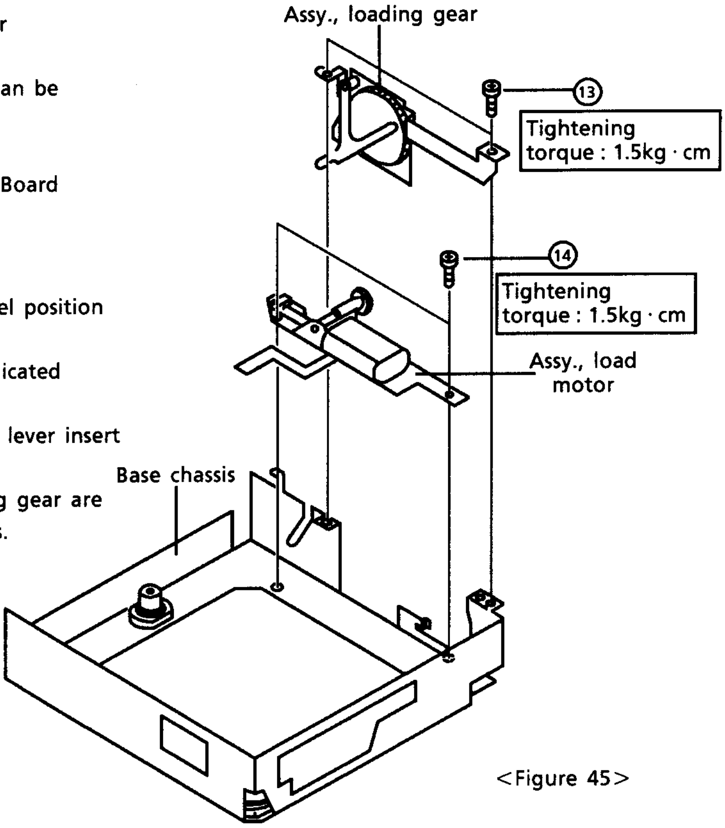
(2) Remove two screws⑭, the Assy., load motor can be removed. (See Figure 45)

(3) Remove a washer⑮ (M1.2), the Idler gear can be removed. (See Figure 46)

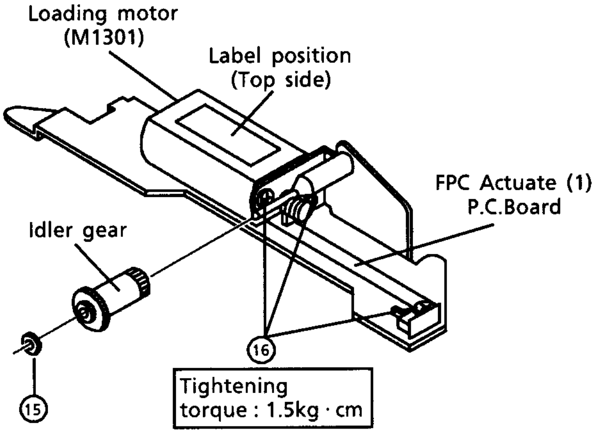
(4) Remove three screws⑯. (See Figure 46)
The Loading motor with FPC Actuate (1) P.C.Board can be removed.

<Assembly notes>

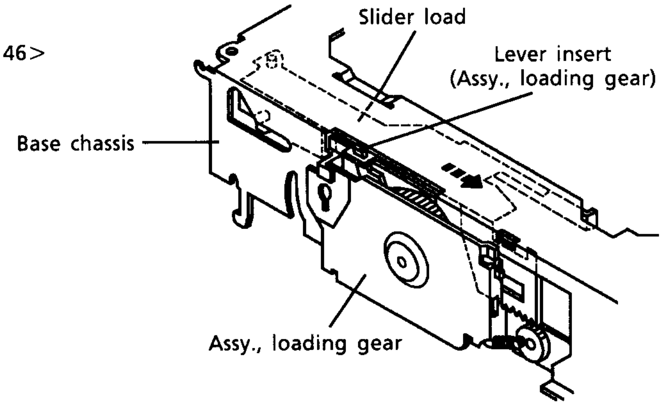
- Mount the Loading motor (M1301) so the label position is correct. (See Figure 46)
- Move the Slider load fully in the direction indicated by the arrow. (See Figure 47)
- When the Assy., loading gear is assemble, the lever insert a hole of the Slider load. (See Figure 47)
- When the Assy., load motor and Assy., loading gear are assemble, first set position next tighten screws.


Assy., loading gear
⑬
Tightening torque : 1.5kg · cm
⑭
Tightening torque : 1.5kg · cm
Assy., load motor
Base chassis

<Figure 45>


Loading motor (M1301)
Label position (Top side)
FPC Actuate (1) P.C.Board
Idler gear
⑯
Tightening torque : 1.5kg · cm
⑮

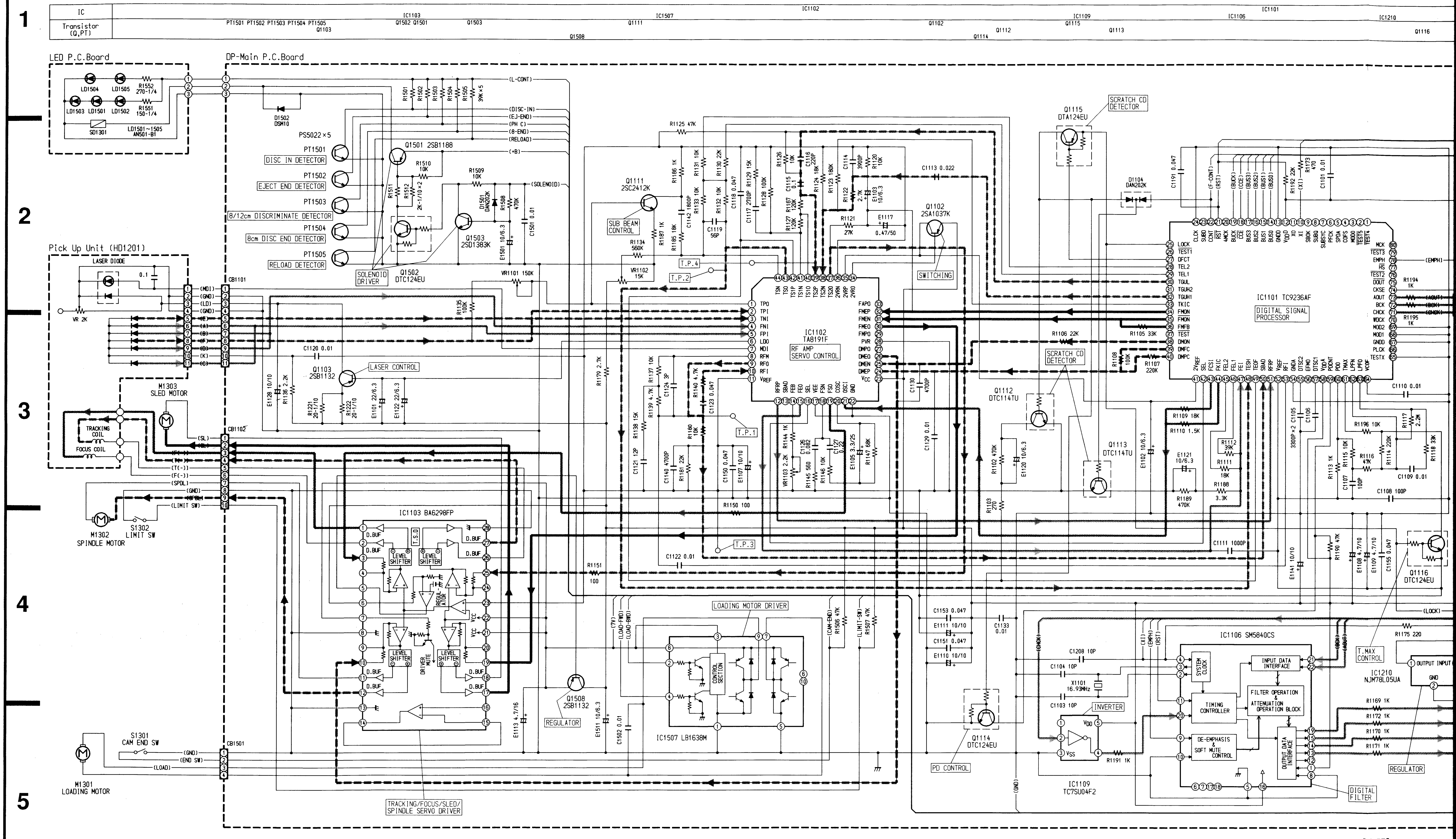
<Figure 46>


Slider load
Lever insert (Assy., loading gear)
Base chassis
Assy., loading gear

<Figure 47>

MEMO

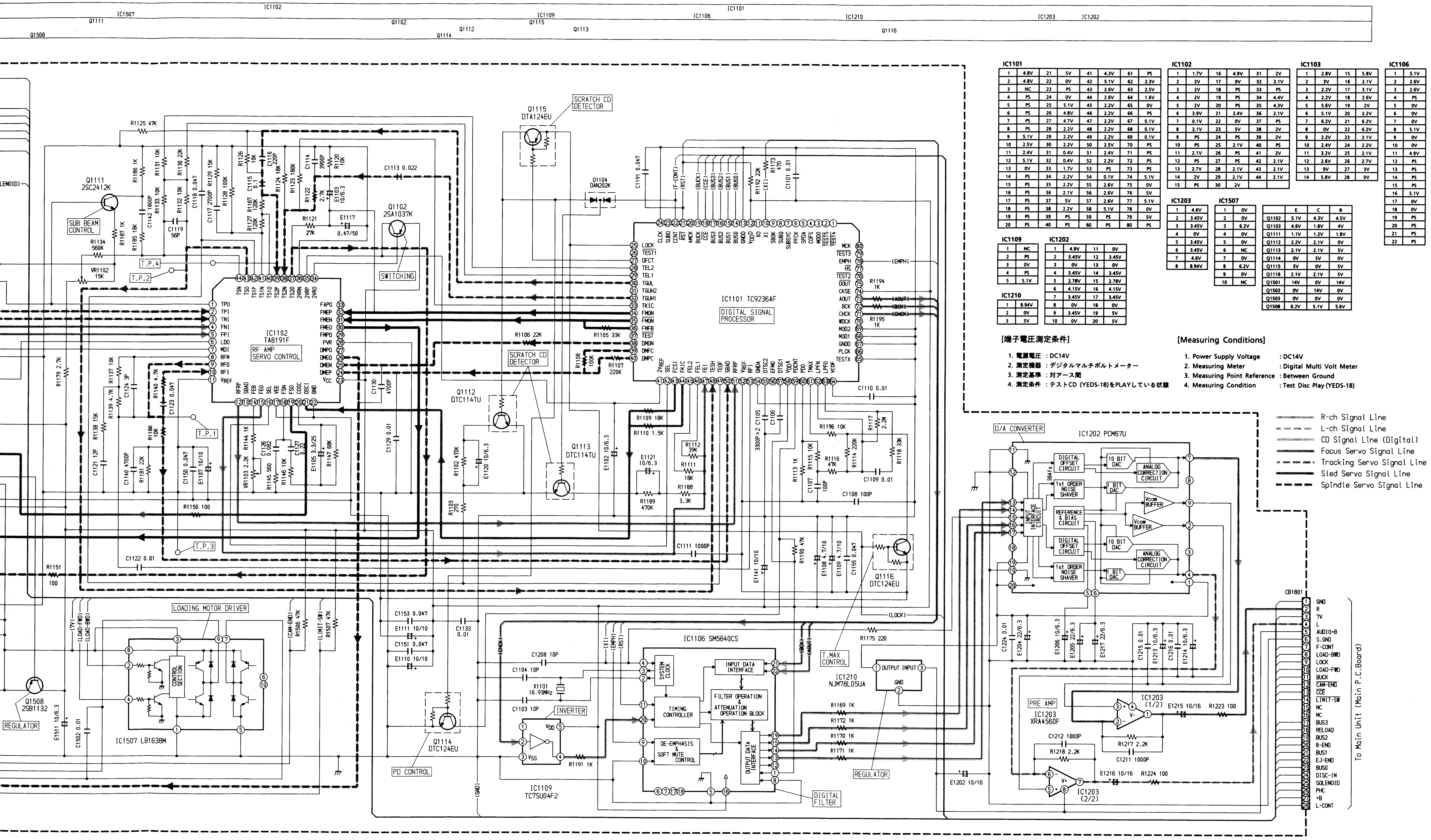
Schematic Diagram


1
2
3
4
5
IC
Transistor (Q,PT)
IC1103
IC1507
IC1102
IC1109
IC1106
IC1101
IC1210
PT1501 PT1502 PT1503 PT1504 PT1505
Q1103
Q1502 Q1501
Q1503
Q1508
Q1111
Q1102
Q1114
Q1112
Q1115
Q1113
Q1116
LED P.C.Board
DP-Main P.C.Board
LD1504
LD1505
LD1503 LD1501 LD1502
R1552 270-1/4
R1551 150-1/4
SD1301
LD1501~1505 AN501-B1
D1502 DSM10
PS5022×5
PT1501 DISC IN DETECTOR
PT1502 EJECT END DETECTOR
PT1503 8/12cm DISCRIMINATE DETECTOR
PT1504 8cm DISC END DETECTOR
PT1505 RELOAD DETECTOR
Q1501 2SB1188
Q1502 DTC124EU
Q1503 2SD1383K
SOLENOID DRIVER
(L-CONT)
(DISC-IN)
(EJ-END)
(PH C)
(8-END)
(RELOAD)
(+B)
(SOLENOID)
R1501 R1502 R1503 R1504 R1505 39K×5
R1510 10K
R1509 10K
D1501 DAN202K
R1508 470K
E1501 10/6.3
C1501 0.01
VR1101 150K
Pick Up Unit (HD1201)
LASER DIODE
VR 2K
CB1101
(MDI)
(GND)
(LD)
(E)
(A)
(B)
(F)
(D)
(K)
(C)
C1120 0.01
Q1103 2SB1132
LASER CONTROL
R1135 100K
R1179 2.7K
M1303 SLED MOTOR
TRACKING COIL
FOCUS COIL
CB1102
(SL)
(T(+))
(F(+))
(T(-))
(F(-))
(SPDL)
(LIMIT SW)
M1302 SPINDLE MOTOR
S1302 LIMIT SW
IC1103 BA6298FP
D.BUF
LEVEL SHIFTER
T.S.D
REGULATOR
DRIVER MUTE
VCC
TRACKING/FOCUS/SLED/SPINDLE SERVO DRIVER
R1151 100
Q1508 2SB1132
REGULATOR
E1113 4.7/16
E1511 10/6.3
C1502 0.01
S1301 CAM END SW
M1301 LOADING MOTOR
CB1501
(GND)
(END SW)
(LOAD)
R1125 47K
Q1111 2SC2412K
SUB BEAM CONTROL
R1134 560K
VR1102 15K
T.P.4
T.P.2
T.P.1
T.P.3
IC1102 TA8191F
RF AMP SERVO CONTROL
TPO TPI TNI FNI FPI LDO MDI RFN RFO RFI VREF
FAPO FMEP FMEN FMEG FMPO PVR DMPO DMEO DMEN DMEP VCC
RFRP SBAD FEB FEO SEL VEE FSN FSO OSCC OSCI GND
TSN TSO TS1P TS1N TS2P TS2N TS2O 2VRN 2VRP 2VRO
LOADING MOTOR DRIVER
CONTROL SECTION
IC1507 LB1638M
(7V)
(LOAD-FWD)
(LOAD-BWD)
(CAM-END)
(LIMIT-SW)
R1506 47K
R1507 47K
C1113 0.022
Q1102 2SA1037K
SWITCHING
C1129 0.01
C1130 4700P
R1102 470K
E1120 10/6.3
R1103 270
Q1112 DTC114TU
Q1113 DTC114TU
Q1115 DTA124EU
SCRATCH CD DETECTOR
D1104 DAN202K
C1191 0.047
C1101 0.01
R1192 22K
R1173 470
R1106 22K
R1105 33K
R1108 100K
R1107 220K
IC1101 TC9236AF
DIGITAL SIGNAL PROCESSOR
(EMPH)
(AOUT)
(BCK)
(CHCK)
R1194 1K
R1195 1K
C1110 0.01
R1109 18K
R1110 1.5K
E1121 10/6.3
R1189 470K
R1188 3.3K
R1111 18K
R1112 39K
R1196 10K
R1117 2.2K
R1116 47K
R1114 220K
R1118 33K
C1109 0.01
C1108 100P
C1107 100P
C1111 1000P
R1190 47K
E1108 4.7/10
E1109 4.7/10
C1155 0.047
E1141 10/10
Q1116 DTC124EU
T.MAX CONTROL
(LOCK)
R1175 220
C1153 0.047
E1111 10/10
C1151 0.047
E1110 10/10
C1133 0.01
Q1114 DTC124EU
PD CONTROL
(GND)
(MCK)
(XI)
(EMPH)
(RST)
C1208 10P
C1104 10P
X1101 16.93MHz
C1103 10P
INVERTER
IC1109 TC7SU04F2
R1191 1K
IC1106 SM5840CS
SYSTEM CLOCK
INPUT DATA INTERFACE
TIMING CONTROLLER
FILTER OPERATION & ATTENUATION OPERATION BLOCK
DE-EMPHASIS & SOFT MUTE CONTROL
OUTPUT DATA INTERFACE
DIGITAL FILTER
IC1210 NJM78L05UA
OUTPUT INPUT
GND
R1169 1K
R1172 1K
R1170 1K
R1171 1K
REGULATOR
A
B
C
D
E
F
G
H

[注記]

1. Cの単位：C無記

2. Rの単位：R無記


IC1507
IC1102
IC1101
Q1111
Q1102
IC1109
Q1115
IC1106
IC1210
IC1203
IC1202
Q1508
Q1112
Q1114
Q1113
Q1116
Q1111
2SC2412K
SUB BEAM CONTROL
SCRATCH CD DETECTOR
Q1115
DTA124EU
D1104
DAN202K
Q1102
2SA1037K
SWITCHING
T.P.1
T.P.2
T.P.3
T.P.4
IC1102
TA8191F
RF AMP SERVO CONTROL
IC1101 TC9236AF
DIGITAL SIGNAL PROCESSOR
SCRATCH CD DETECTOR
Q1112
DTC114TU
Q1113
DTC114TU
Q1116
DTC124EU
T.MAX CONTROL
LOADING MOTOR DRIVER
IC1507 LB1638M
CONTROL SECTION
Q1508
2SB1132
REGULATOR
Q1114
DTC124EU
PD CONTROL
IC1109
TC7SU04F2
INVERTER
X1101
16.93MHz
IC1106 SM5840CS
SYSTEM CLOCK
TIMING CONTROLLER
INPUT DATA INTERFACE
FILTER OPERATION & ATTENUATION OPERATION BLOCK
DE-EMPHASIS & SOFT MUTE CONTROL
OUTPUT DATA INTERFACE
DIGITAL FILTER
IC1210
NJM78L05UA
OUTPUT INPUT
GND
REGULATOR
D/A CONVERTER
IC1202 PCM67U
DIGITAL OFFSET CIRCUIT
10 BIT DAC
ANALOG CORRECTION CIRCUIT
1st ORDER NOISE SHAVER
1 BIT DAC
INPUT INTERFACE CIRCUIT
REFERENCE & BIAS CIRCUIT
Vcom BUFFER
PRE AMP
IC1203
XRA4560F
IC1203 (1/2)
IC1203 (2/2)
CB1801
1 GND
2 R
3 7V
4 L
5 AUDIO+B
6 S.GND
7 F-CONT
8 LOAD-BWD
9 LOCK
10 LOAD-FWD
11 BUCK
12 CAM-END
13 CCE
14 LIMIT-SW
15 NC
16 NC
17 BUS3
18 RELOAD
19 BUS2
20 8-END
21 BUS1
22 EJ-END
23 BUS0
24 DISC-IN
25 SOLENOID
26 PHC
27 +B
28 L-CONT
To Main Unit (Main P.C.Board)
R-ch Signal Line
L-ch Signal Line
CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Sled Servo Signal Line
Spindle Servo Signal Line

IC1101

1	4.8V	21	5V	41	4.3V	61	PS
2	4.8V	22	0V	42	5.1V	62	2.3V
3	NC	23	PS	43	2.6V	63	2.5V
4	PS	24	0V	44	2.6V	64	1.6V
5	PS	25	5.1V	45	2.2V	65	0V
6	PS	26	4.8V	46	2.2V	66	PS
7	PS	27	4.7V	47	2.2V	67	0.1V
8	PS	28	2.2V	48	2.2V	68	0.1V
9	5.1V	29	2.2V	49	2.2V	69	0.1V
10	2.5V	30	2.2V	50	2.5V	70	PS
11	2.4V	31	0.4V	51	2.4V	71	PS
12	5.1V	32	0.4V	52	2.2V	72	PS
13	0V	33	1.7V	53	PS	73	PS
14	PS	34	2.2V	54	0.1V	74	5.1V
15	PS	35	2.2V	55	2.6V	75	0V
16	PS	36	2.1V	56	2.6V	76	5V
17	PS	37	5V	57	2.6V	77	5.1V
18	PS	38	2.2V	58	5.1V	78	0V
19	PS	39	PS	59	PS	79	5V
20	PS	40	PS	60	PS	80	PS

IC1102

1	1.7V	16	4.9V	31	2V
2	2V	17	0V	32	2.1V
3	2V	18	PS	33	PS
4	2V	19	PS	34	4.4V
5	2V	20	PS	35	4.3V
6	3.9V	21	2.4V	36	2.1V
7	0.1V	22	0V	37	PS
8	2.1V	23	5V	38	2V
9	PS	24	PS	39	2V
10	PS	25	2.1V	40	PS
11	2.1V	26	PS	41	2V
12	PS	27	PS	42	2.1V
13	2.7V	28	2.1V	43	2.1V
14	2V	29	2.1V	44	2.1V
15	PS	30	2V		

IC1103

1	2.8V	15	5.8V
2	3V	16	2.1V
3	2.2V	17	3.1V
4	2.2V	18	2.6V
5	5.6V	19	2V
6	5.1V	20	2.2V
7	6.2V	21	6.2V
8	0V	22	6.2V
9	2.2V	23	2.1V
10	2.4V	24	2.2V
11	3.2V	25	2.1V
12	2.6V	26	2.7V
13	0V	27	3V
14	5.8V	28	0V

IC1106

1	5.1V
2	2.6V
3	2.6V
4	PS
5	0V
6	0V
7	0V
8	5.1V
9	0V
10	0V
11	4.9V
12	PS
13	PS
14	PS
15	PS
16	5.1V
17	0V
18	0V
19	PS
20	PS
21	PS
22	PS

IC1203

1	4.6V
2	3.45V
3	3.45V
4	0V
5	3.45V
6	3.45V
7	4.6V
8	8.94V

IC1507

1	0V
2	0V
3	6.2V
4	0V
5	0V
6	NC
7	0V
8	6.2V
9	0V
10	NC

	E	C	B
Q1102	5.1V	4.3V	4.5V
Q1103	4.6V	1.8V	4V
Q1111	1.1V	1.2V	1.8V
Q1112	2.2V	2.1V	0V
Q1113	2.1V	2.1V	5V
Q1114	0V	5V	0V
Q1115	5V	0V	5V
Q1116	2.1V	2.1V	5V
Q1501	14V	0V	14V
Q1502	0V	14V	0V
Q1503	0V	0V	0V
Q1508	6.2V	5.1V	5.6V

IC1109

1	NC
2	PS
3	0V
4	PS
5	5.1V

IC1202

1	4.9V	11	0V
2	3.45V	12	3.45V
3	0V	13	0V
4	3.45V	14	3.45V
5	2.78V	15	2.78V
6	4.15V	16	4.15V
7	3.45V	17	3.45V
8	0V	18	0V
9	3.45V	19	5V
10	0V	20	5V

IC1210

1	8.94V
2	0V
3	5V

[端子電圧測定条件]

1. **電源電圧** ：DC14V
2. **測定機器** ：デジタルマルチボルトメーター
3. **測定基準** ：対アース間
4. **測定条件** ：テストCD (YEDS-18)をPLAYしている状態

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Volt Meter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : Test Disc Play (YEDS-18)

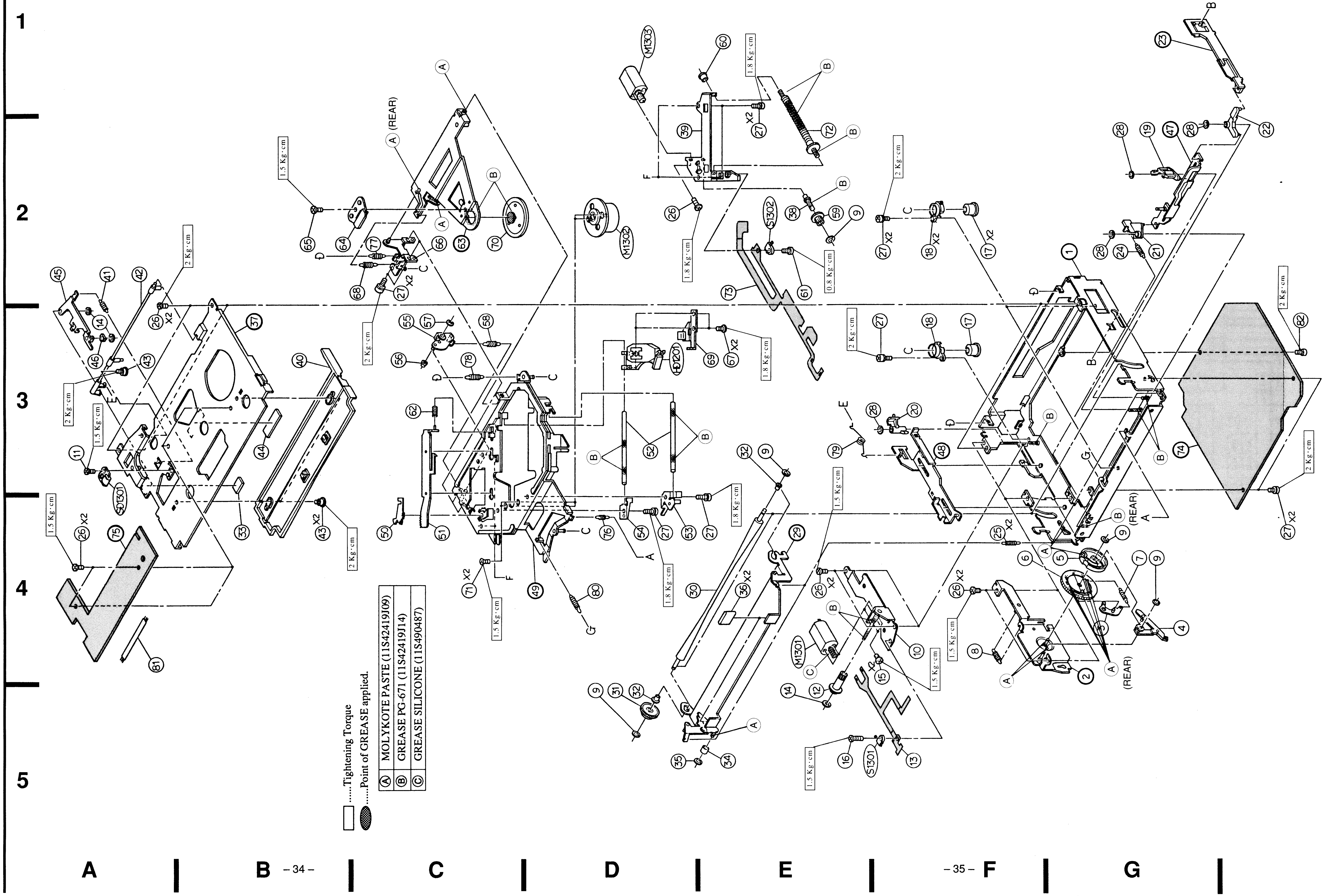
[注記]

1. Cの単位：C無記入→μF、P→PF、／V→耐電圧を示す。
2. Rの単位：R無記入→Ω、K→KΩ、M→MΩ

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Exploded View (CD Mechanism)


1
2
3
4
5
A
B
C
D
E
F
G
(REAR)
M1305
M1302
M1301
S1302
S1301
D1201
SD1301
1.5 Kg·cm
1.8 Kg·cm
2 Kg·cm
0.8 Kg·cm
X2
1
2
4
5
6
7
8
9
10
11
12
13
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82

☐ ......Tightening Torque

● ......Point of GREASE applied.

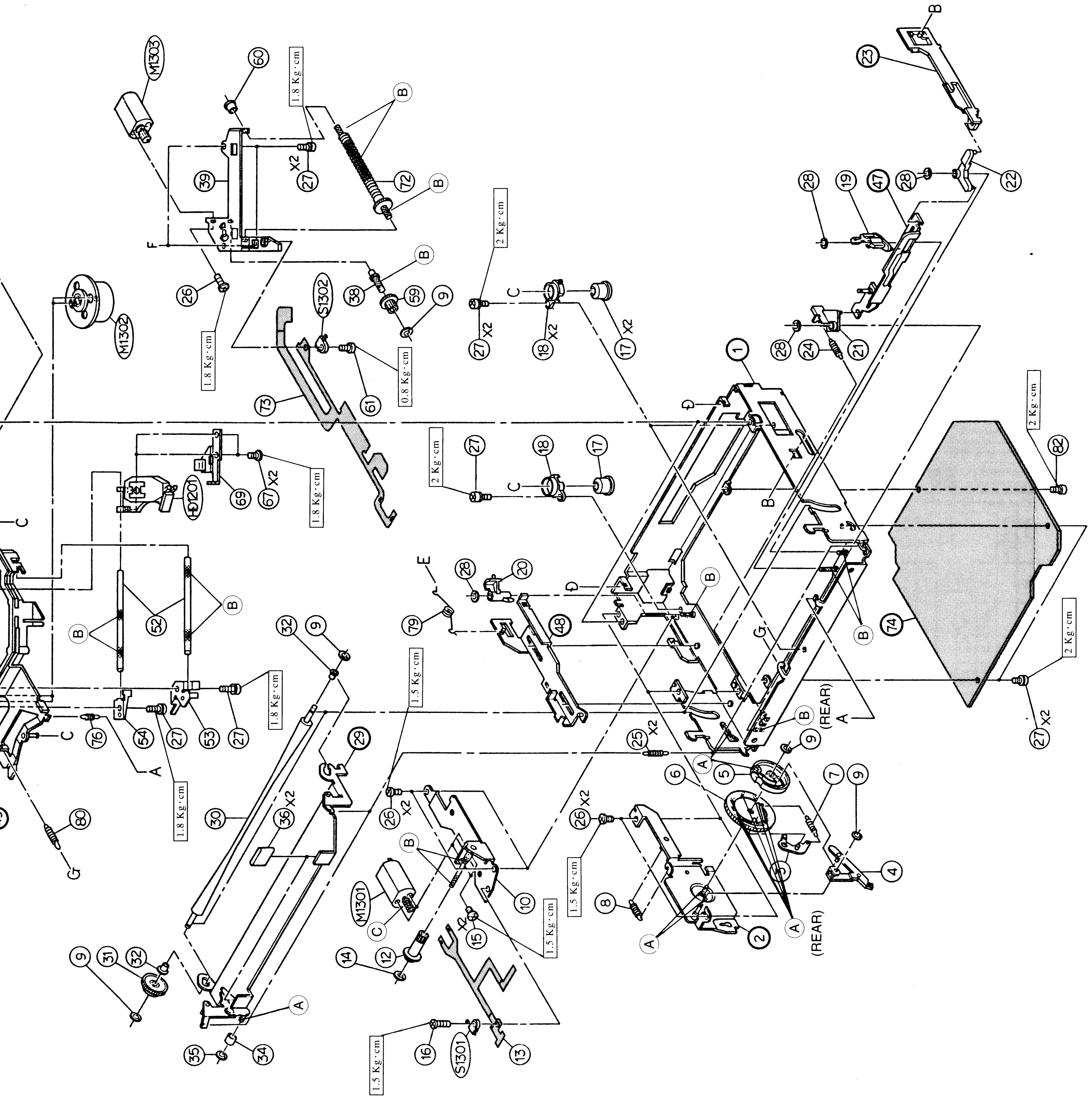
Ⓐ MOLYKOTE PASTE (11S42419J09)

Ⓑ GREASE PG-671 (11S42419J14)

Ⓒ GREASE SILICONE (11S490487)

CD Me

Symbol No.	Index
3	4-G
4	4-G
5	4-G
6	4-F
7	4-G
8	4-F
9	
10	4-F
11	3-A
12	5-E
13	5-F
14	
15	5-F
16	5-E
17	
18	
19	2-G
20	3-F
21	2-G
22	2-H
24	2-G
25	4-F
26	
27	
28	
30	4-D
31	5-D
32	
33	4-B
34	5-E
35	5-D
36	4-E
38	2-E
39	2-D
40	3-B
41	2-A
42	2-A
43	
44	3-B
45	2-A
46	3-A
50	4-C
51	4-C
52	3-D
53	4-D
54	4-D
55	3-C


M1303
60
1.8 Kg·cm
B
39
27
X2
72
B
F
M1302
26
1.8 Kg·cm
S1302
38
B
59
9
0.8 Kg·cm
61
73
2 Kg·cm
C
27 X2
18 X2
17 X2
23
22
28
19
47
28
1
28
24
21
D
2 Kg·cm
82
HD1201
69
67 X2
1.8 Kg·cm
2 Kg·cm
27
18
17
C
B
C
52
B
B
E
28
20
79
48
D
B
G
B
74
2 Kg·cm
32
9
1.8 Kg·cm
1.5 Kg·cm
76
54
27
53
27
C
A
80
G
30
36 X2
29
1.8 Kg·cm
B
(REAR)
A
27 X2
25 X2
9
A
5
6
7
9
26 X2
26 X2
B
M1301
C
10
8
1.5 Kg·cm
4
3
A
2
A
(REAR)
9
31
32
12
14
15
1.5 Kg·cm
A
35
34
1.5 Kg·cm
16
S1301
13

CD Mechanism Assembly Parts List

Note : No parts number on parts list are not supplied.

Symbol No.	Index	Part No.	Description
3	4-G	01A50856W01	Assy., Riv. Timing
4	4-G	01A50854W01	Assy., Riv. Lever Cam
5	4-G	45B50814W01	Cam, Loading
6	4-F	44B50813W01	Gear, Cam
7	4-G	41B50978W02	Spring, Pull
8	4-F	41B50978W05	Spring, Pull
9		04B41345P12	Washer, Lock (M1.7)
10	4-F	01A50852W01	Assy., Riv. Bracket Motor
11	3-A	03S94385F02	Screw, Pan (M1.7×3)
12	5-E	44B50812W01	Gear, Idler
13	5-F	84T55236W01	FPC Actuate(1) P.C.Board
14		04B41345P15	Washer, Lock (M1.2)
15	5-F	03S94385F07	Screw, Pan (M2×2)
16	5-E	03S94385F11	Screw, Pan (M2×5.2)
17		75B58086W01	Damper, DP-H
18		15A40136W01	Holder, Damper-S
19	2-G	45B50815W01	Arm, Lock (F)
20	3-F	45B50816W01	Arm, Lock (R)
21	2-G	45A50817W01	Arm, Link (L)
22	2-H	45A50818W01	Arm, Link (R)
24	2-G	41B50978W01	Spring, Pull
25	4-F	41B50978W04	Spring, Pull
26		03S94385F09	Screw, Pan (M2×3)
27		03S40014G07	Screw, W/Washer (M2×4)
28		04B41345P45	Washer, Lock (M2.1)
30	4-D	49B51428W01	Roller, (G) DP-H
31	5-D	01T55276W01	Assy., Clutch DP-H
32		43A51504W01	Bush, Roller
33	4-B	75A58090W01	Sheet, Arm Solenoid
34	5-E	43A50843W01	Roller, Link
35	5-D	04B41345P18	Washer, Lock (M1.2)
36	4-E	75A58084W01	Rubber, Arm Guide
38	2-E	46A50694W01	Stud, Middle
39	2-D	07B50702W01	Bracket, Motor
40	3-B	15C50819W01	Guide, Top DP-H
41	2-A	41B50978W03	Spring, Pull
42	2-A	01V53900W76	Assy., Arm Stopper
43		03A58045W01	Screw, Special (M2×3.9)
44	3-B	75A58082W01	Sheet, Mag DP-H
45	2-A	01A50849W01	Assy., Riv. Arm Solenoid
46	3-A	07A50997W01	Plate, Solenoid
50	4-C	45A50678W01	Lever, Pinlock
51	4-C	45B50676W01	Lever, Link
52	3-D	47A50698W01	Shaft, Pickup
53	4-D	07A50688W01	Stopper, Shaft (A)
54	4-D	07A50689W01	Stopper, Shaft (B)
55	3-C	01A50673W01	Assy., Riv. Lever Arm
56	3-C	43A50701W01	Bush, Lever
57	3-C	04C42091G06	Ring, "E" (M1.5)
58	3-C	41B50978W06	Spring, Pull
59	2-E	44A50680W01	Gear, Middle
60	1-E	43A50684W01	Bush, Slider
61	2-E	03S70494F12	Screw, Pan (M2×8)
62	3-C	41A50707W01	Spring, Comp
64	2-B	07A50687W01	Stopper, Clamp
65	2-B	03S94385F01	Screw, Pan (M1.7×2.3)
66	2-C	01A50672W01	Assy., Riv. Bracket Arm Clamp
67	3-E	03S94385F32	Screw, Pan (M2×2.2)
68	2-C	41B50978W07	Spring, Pull
69	3-F	41A50682W01	Spring, Nut
70	2-C	43A50683W01	Table, Clamper
71	4-C	03S94385F29	Screw, Countersink (M1.7×4)
72	2-E	01V51800W71	Assy., Shaft Screw
73	2-E	84T55237W01	FPC Actuate(2) P.C.Board
76	4-D	41B50978W08	Spring, Pull
77	2-C	41B50978W09	Spring, Pull
78	3-C	41B50978W10	Spring, Pull
79	3-E	41A50977W01	Spring, Lever
80	4-D	41B50978W11	Spring, Pull
81	4-A	30T25426W03	Wire, Parallel (3P)
82	3-H	03S43997P61	Screw, Round (M2×4)
Miscellaneous			
HD1201	3-D	88T55261W01	Pick Up Unit
M1301	4-E	01V53900W77	Assy., Loading Motor (3.5V-110mA)
M1302	2-D	59T55262W01	Motor, Spindle (3V-120mA)
M1303	1-D	01V54100W69	Assy., Sled Motor (3.5V-110mA)
S1301	5-E	40T71025F03	Switch, Detector (CAM END)
S1302	2-E	40T71025F03	Switch, Detector (LIMIT)
SD1301	4-A	01T55277W01	Assy., Solenoid DP-H

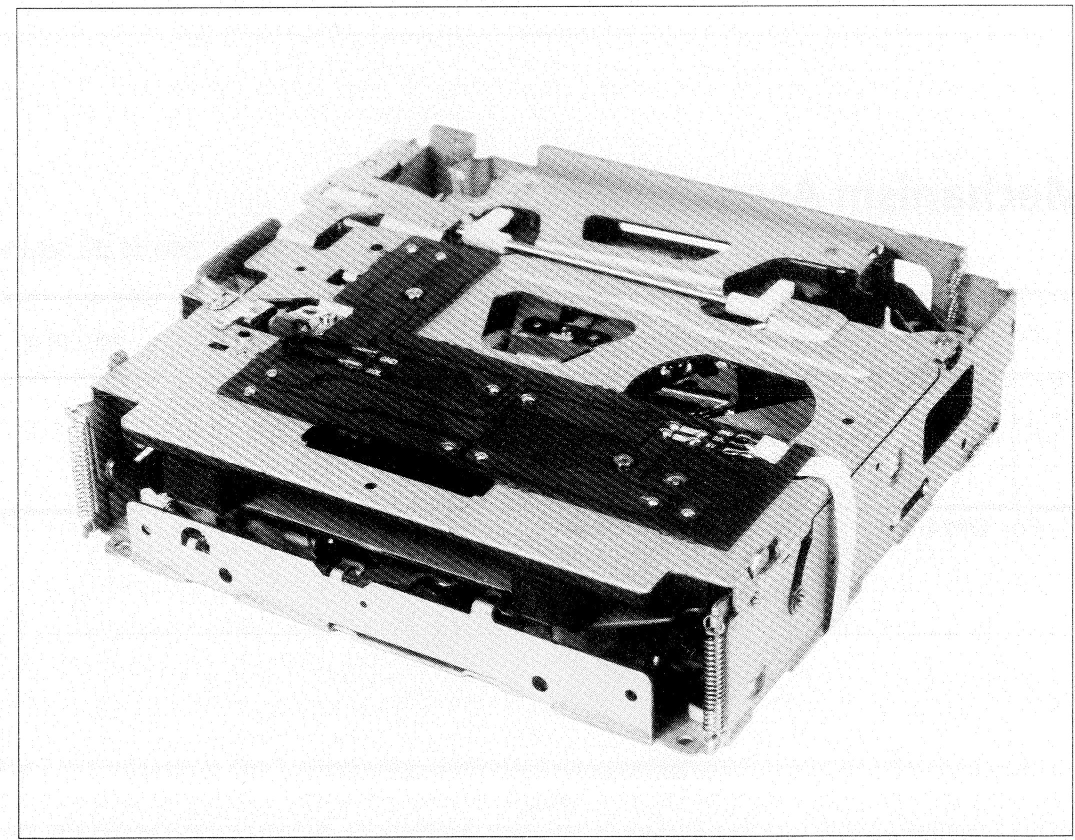
ALPINE®

SERVICE MANUAL

CD Player Mechanism

– ADDENDUM & REVISED (II) –

- For information that is not mentioned in this service manual, refer to the Service Manual • DP-H SERIES (68P51097W02).



DP-H SERIES

Contents

CD Mechanism Assembly Parts List (Only Difference) 2
Exploded View (CD Mechanism) .... 3 to 4

CD Mechanism Assembly Parts List

Note : The parts is not mentioned, refer to the Service Manual DP-H Series (68P51097W02).

Symbol No.		Index	Part No.	Description	Symbol No.	Index	Part No.	Description
	52	3-D	47A61203W01	Shaft, Pick up				
△	89	5-H	15A61057W01	Cover, Photo (A)				
△	90	5-G	15A61058W01	Cover, Photo (B)				

Note : △: For DP24H020 Model Only, Others : Common.

Exploded View (CD Mechanism)

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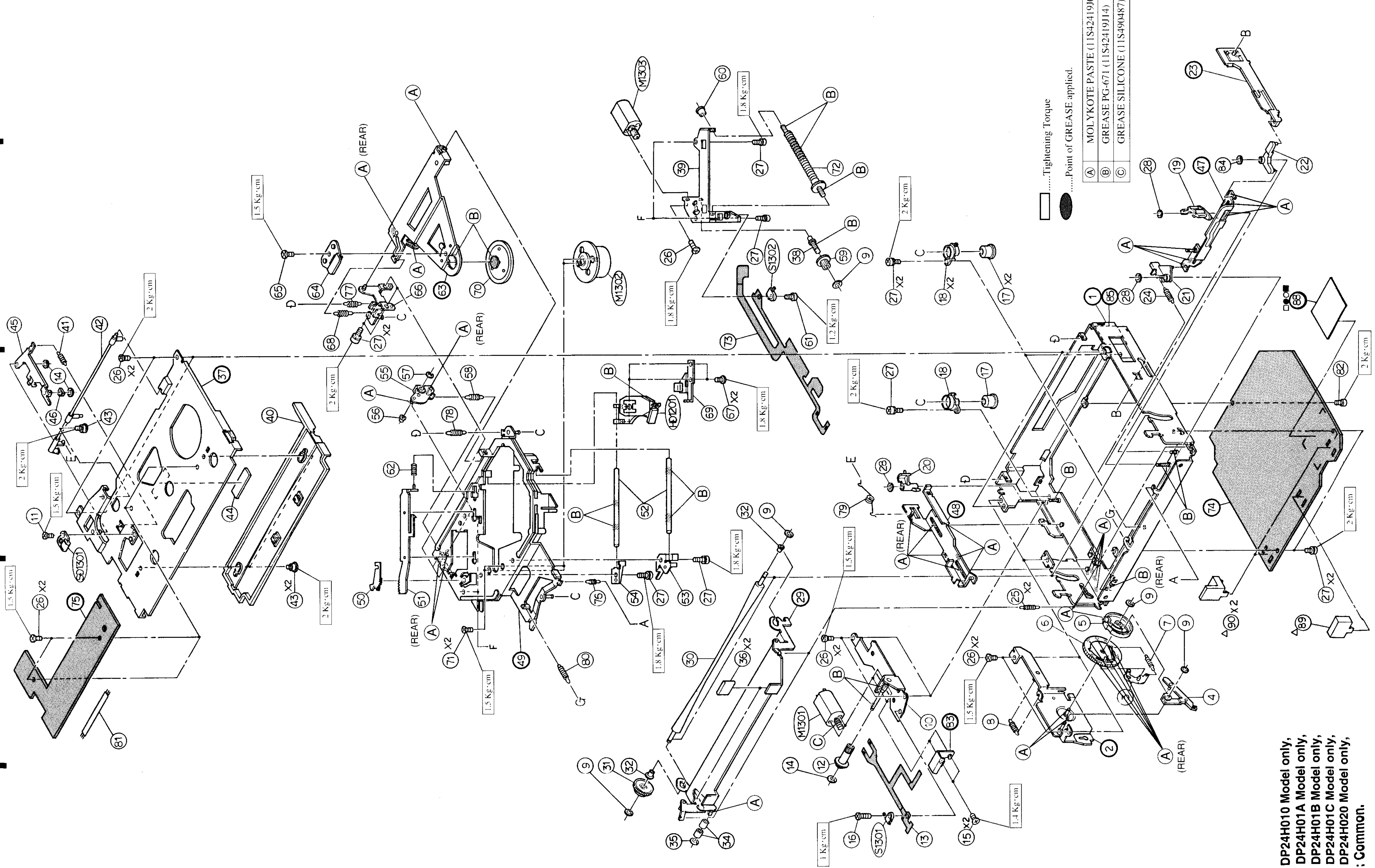
(REAR)
2 Kg·cm
1.5 Kg·cm
1.8 Kg·cm
1.2 Kg·cm
1.4 Kg·cm
1 Kg·cm
X2
A
B
C
D
E
F
G
M1301
M1302
M1303
S1301
S1302
SD1301
SD1201
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□ ……Tightening Torque

● ……Point of GREASE applied.

Ⓐ	MOLYKOTE PASTE (11S42419J09)
Ⓑ	GREASE PG-671 (11S42419J14)
Ⓒ	GREASE SILICONE (11S490487)

NOTE:
□: For DP24H010 Model only,
○: For DP24H01A Model only,
●: For DP24H01B Model only,
■: For DP24H01C Model only,
△: For DP24H020 Model only,
Others : Common.

A | B | C | D | E | F | G | H